TIP PROJECT: R-2247EB

CONTRACT: C204137

See Sheet 1A For Index of Sheets
See Sheet 1B For Standard Symbology Sheet

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

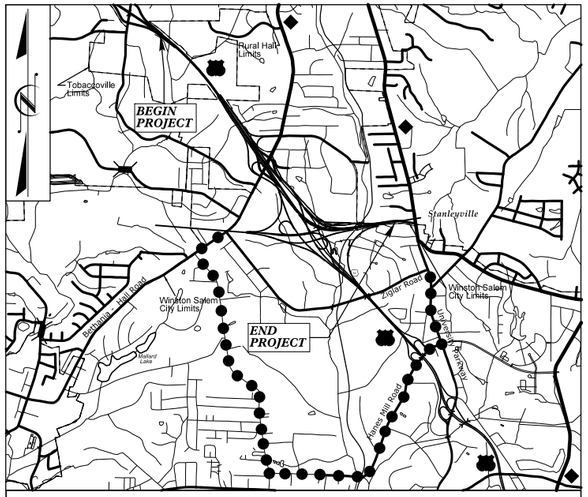
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2247EB	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34409.3.17	NHP-0052(056)	P.E. , ROW,
		UTILITIES &
		CONSTRUCTION

LOCATION: WINSTON-SALEM NORTHERN BELTWAY – INTERCHANGE AT US 52 (FUTURE I-74)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNING AND STRUCTURES

4B HYDRAULIC CONCURRENCE MEETING
2-13-2019

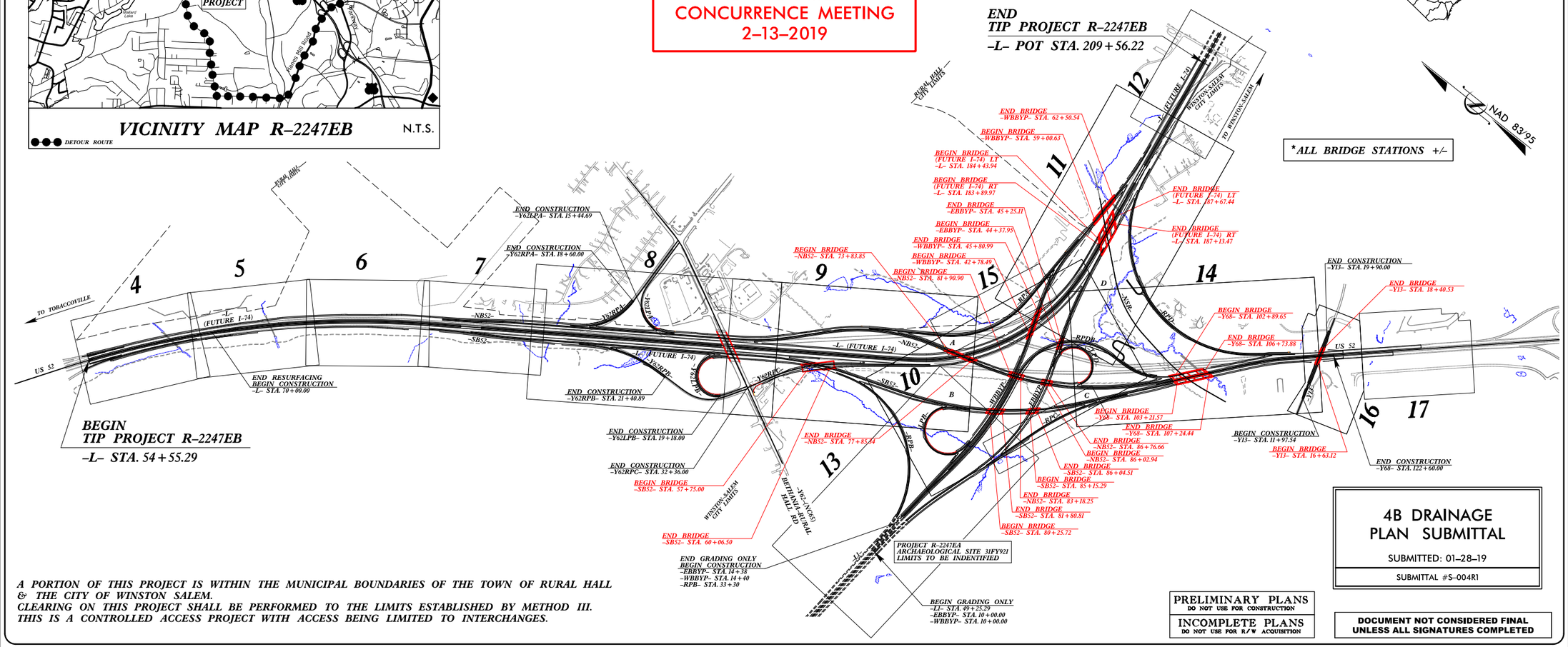


VICINITY MAP R-2247EB N.T.S.

DETOUR ROUTE

NAD 83/95

*ALL BRIDGE STATIONS +/-



A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF RURAL HALL & THE CITY OF WINSTON SALEM.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

4B DRAINAGE PLAN SUBMITTAL
SUBMITTED: 01-28-19
SUBMITTAL #S-004R1

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2015 = 61,700
ADT 2035 = 68,700
K = 9%
D = 55%
T = 21%*
V = 70 MPH
* (TTST=14%+DUAL 7%)
FUNC. CLASSIFICATION = RURAL FREEWAY STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2247EB = 2.875 MILES
LENGTH STRUCTURE TIP PROJECT R-2247EB = 0.061 MILES*
TOTAL LENGTH OF TIP PROJECT R-2247EB = 2.936 MILES
* LENGTH BASED ON EB BRIDGES

NCDOT CONTACT: K. ZAK HAMIDI, PE
DESIGN BUILD PROJECT ENGINEER – TRANSPORTATION PROGRAM MANAGEMENT UNIT

PLANS PREPARED FOR THE NCDOT BY:

BLYTHE

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 21, 2018

LETTING DATE:
AUGUST 21, 2018

MARK F. ROBBINS, PE
DESIGN PROJECT MANAGER

J. ADAM FREEMAN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

1/25/2019
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pugfms

PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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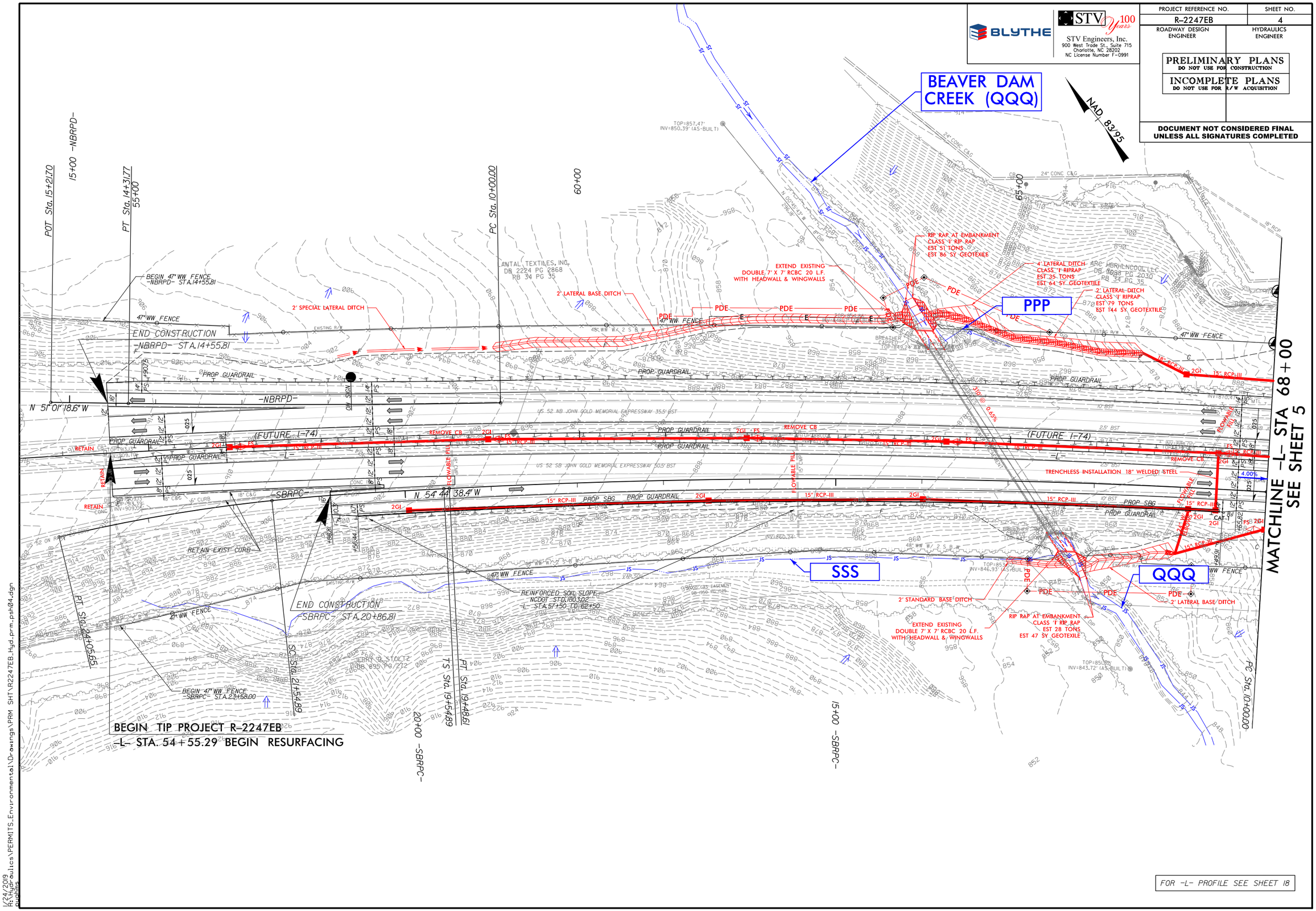

1/24/2019
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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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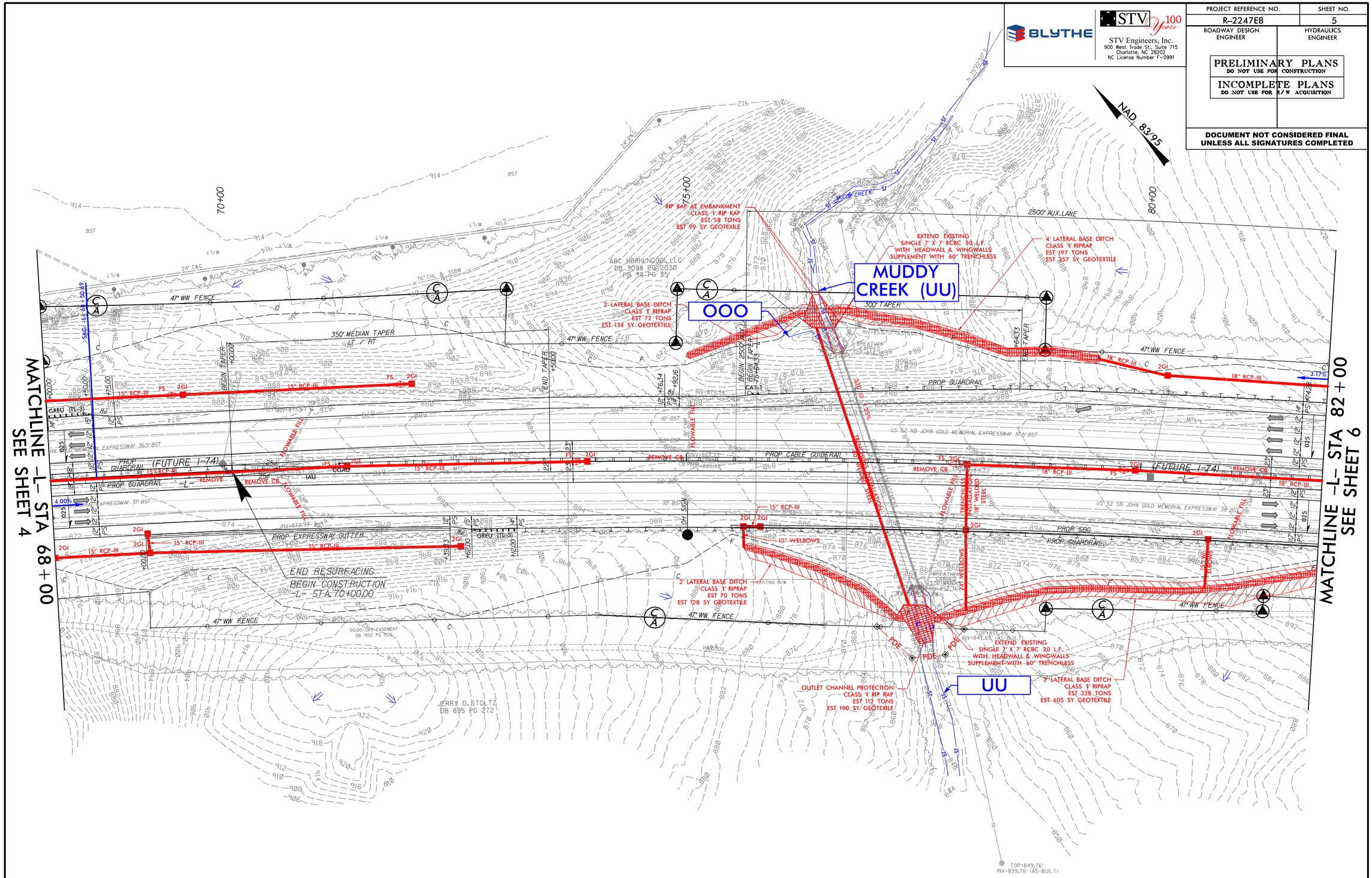

FOR -L- PROFILE SEE SHEETS 18 & 19

1/24/2019
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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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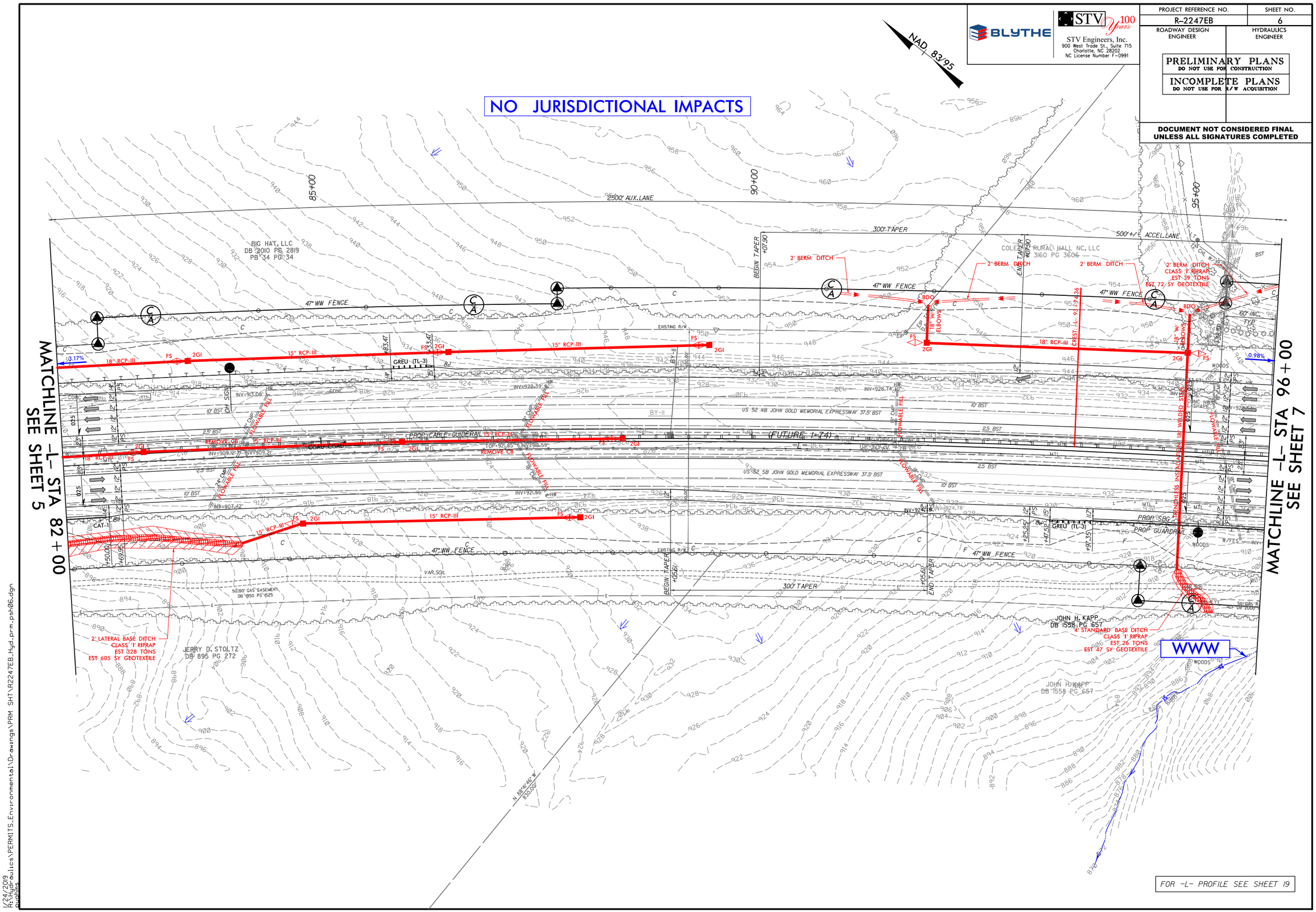

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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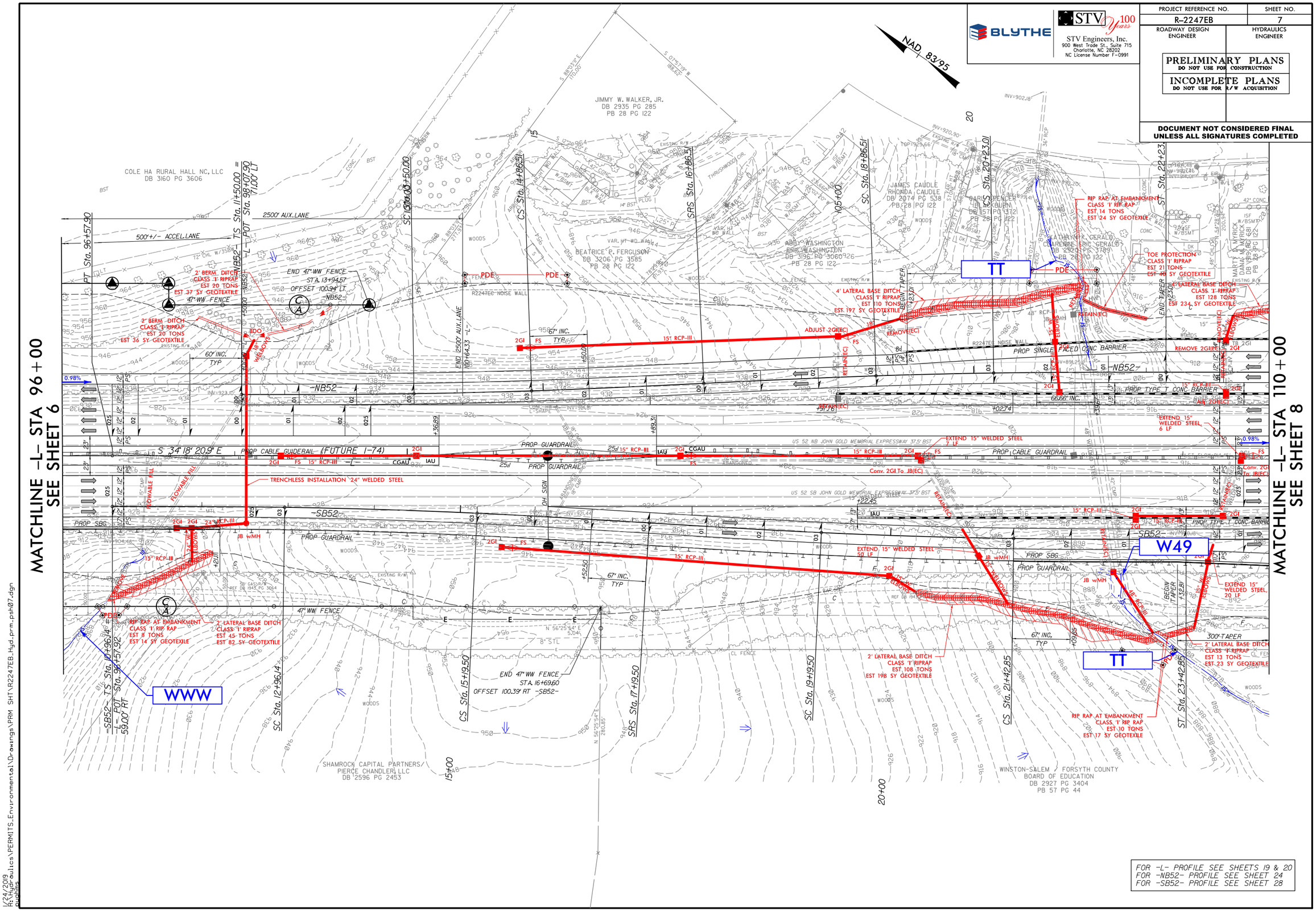

FOR -L- PROFILE SEE SHEETS 19 & 20
FOR -NB52- PROFILE SEE SHEET 24
FOR -SB52- PROFILE SEE SHEET 28

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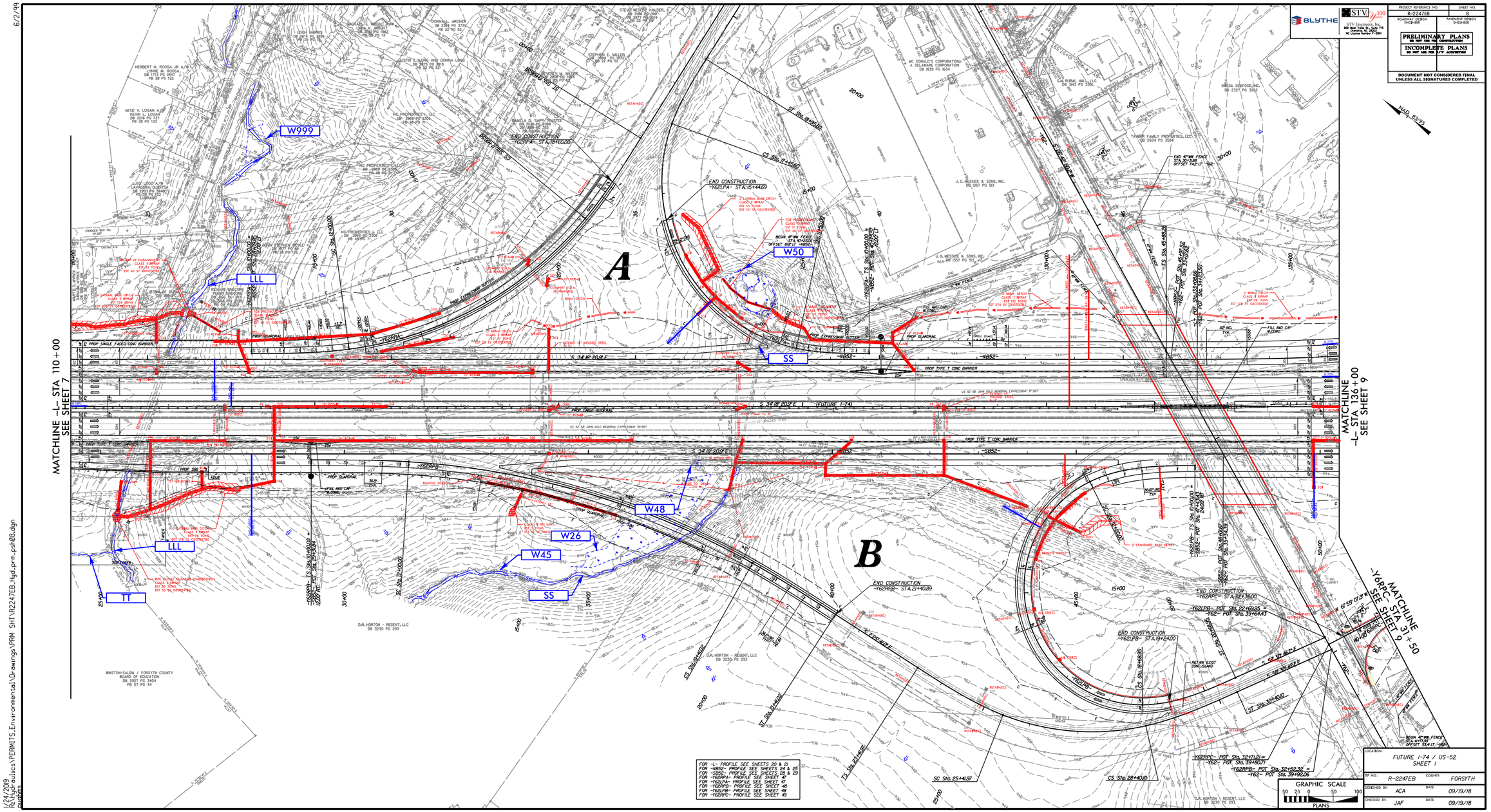

FOR -L- PROFILE SEE SHEETS 20 & 21
FOR -NB52- PROFILE SEE SHEETS 24 & 25
FOR -SB52- PROFILE SEE SHEETS 28 & 29
FOR -Y62RPA- PROFILE SEE SHEET 47
FOR -Y62LPA- PROFILE SEE SHEET 47
FOR -Y62RPB- PROFILE SEE SHEET 48
FOR -Y62LPB- PROFILE SEE SHEET 48
FOR -Y62RPC- PROFILE SEE SHEET 49

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500 West Main St., Suite 715
Clarksville, TN 37402
NC License Number F-1091

PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	8
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
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INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/95

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:	FUTURE I-74 / US-52 SHEET 1		
TIP NO.:	R-2247EB	COUNTY:	FORSYTH
DESIGNED BY:	ACA	DATE:	09/19/18
CHECKED BY:	JAF	DATE:	09/19/18

6/2/99

1/24/2019
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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	8-A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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Charlotte, NC 28202
NC License Number F-0991

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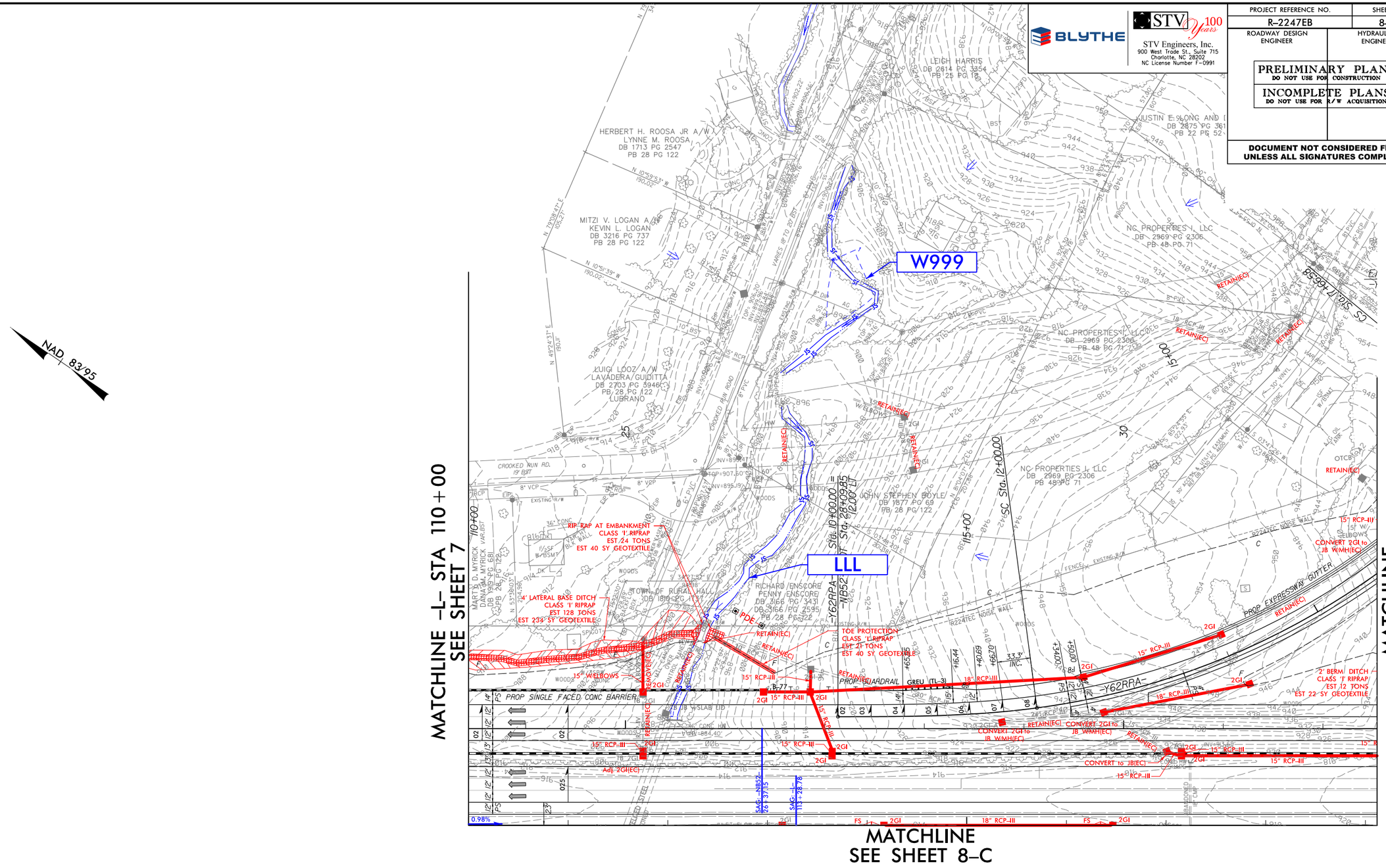

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	8-B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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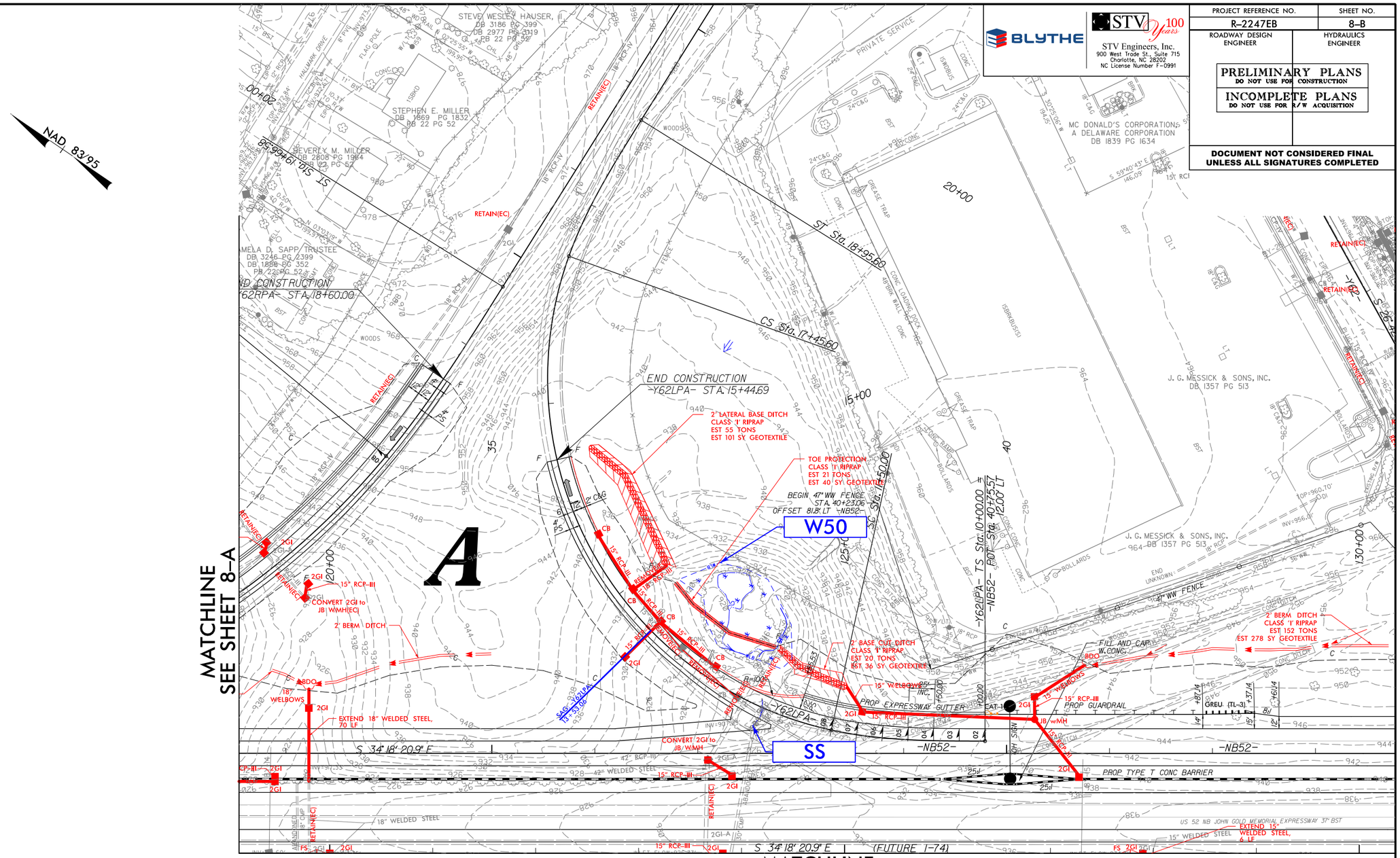

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	8-C
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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INCOMPLETE PLANS
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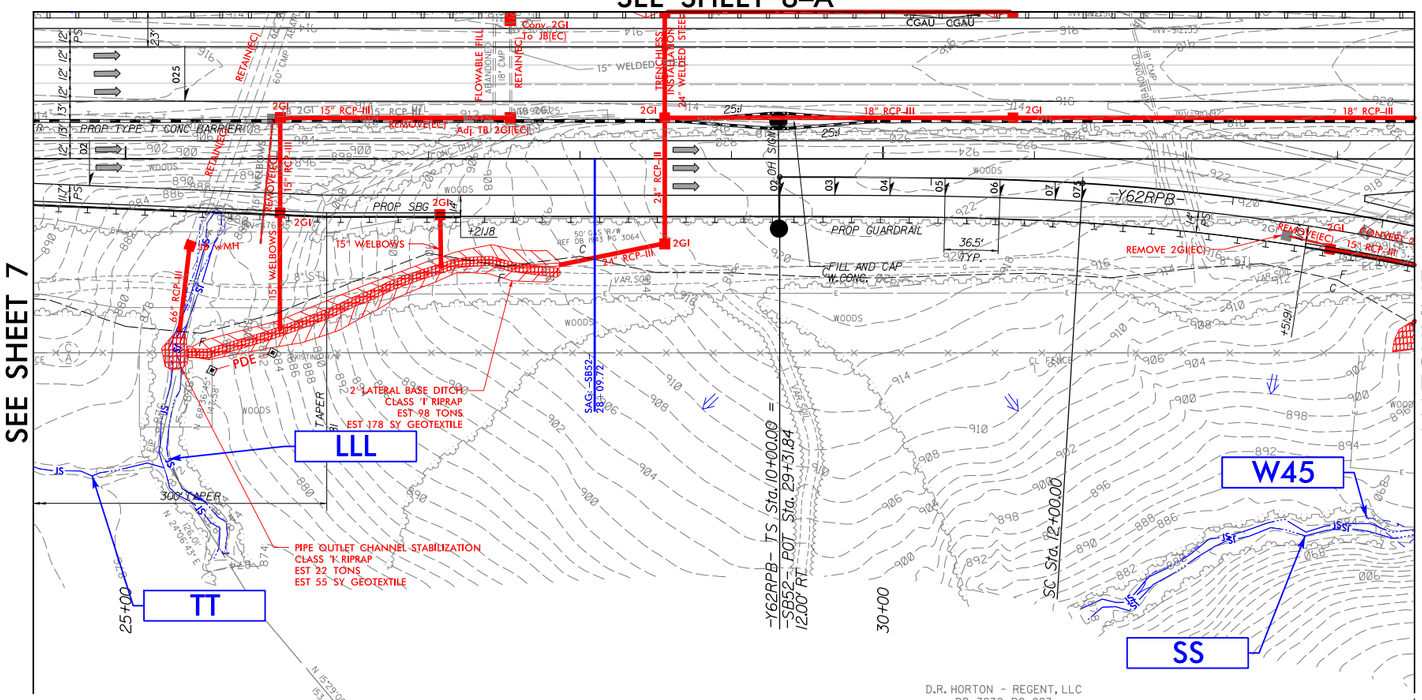
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/95

MATCHLINE
SEE SHEET 8-A

MATCHLINE -L- STA 110+00
SEE SHEET 7



MATCHLINE
SEE SHEET 8-D

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	8-D
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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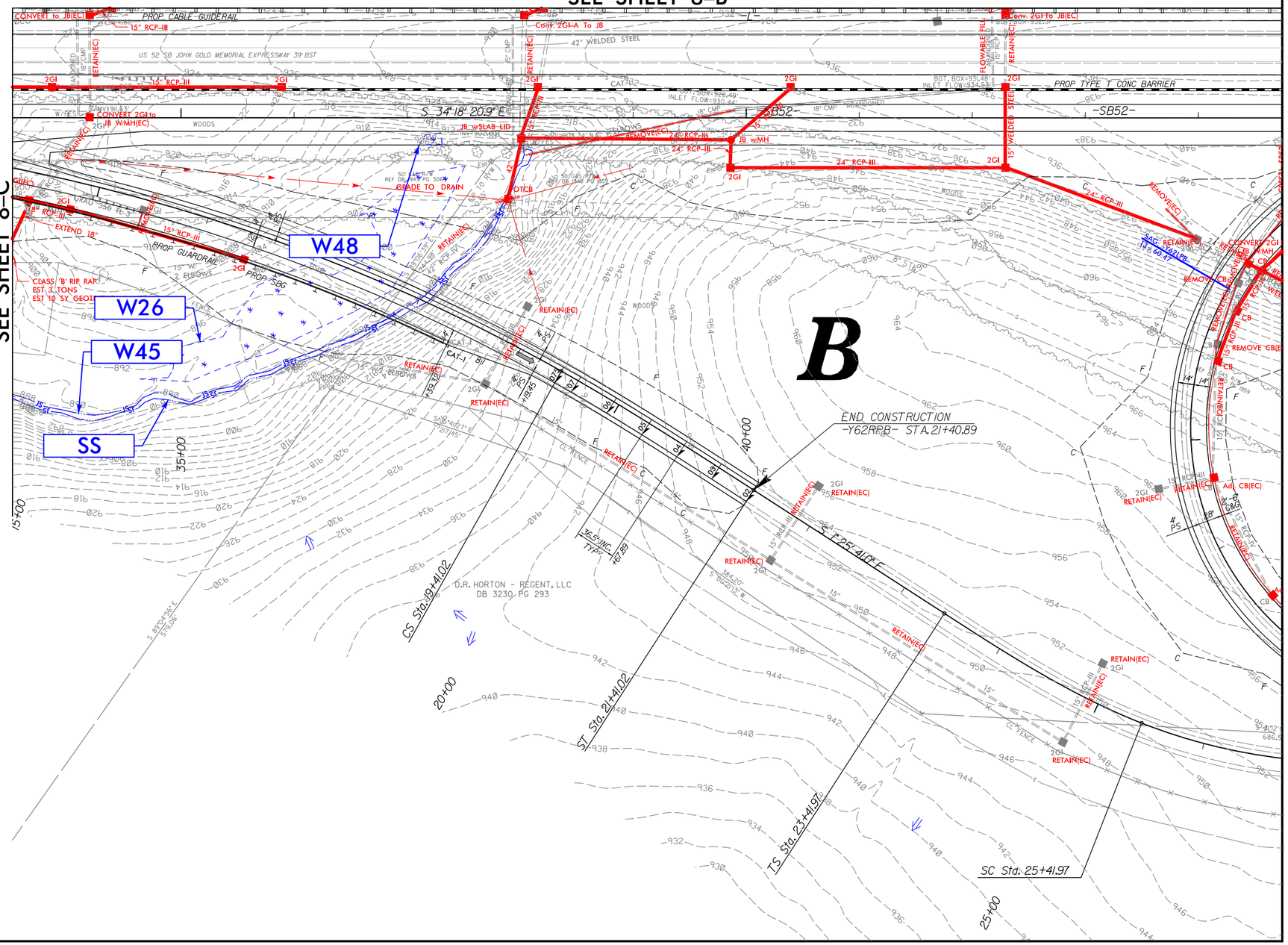
MATCHLINE SEE SHEET 8-B

MATCHLINE SEE SHEET 8-C



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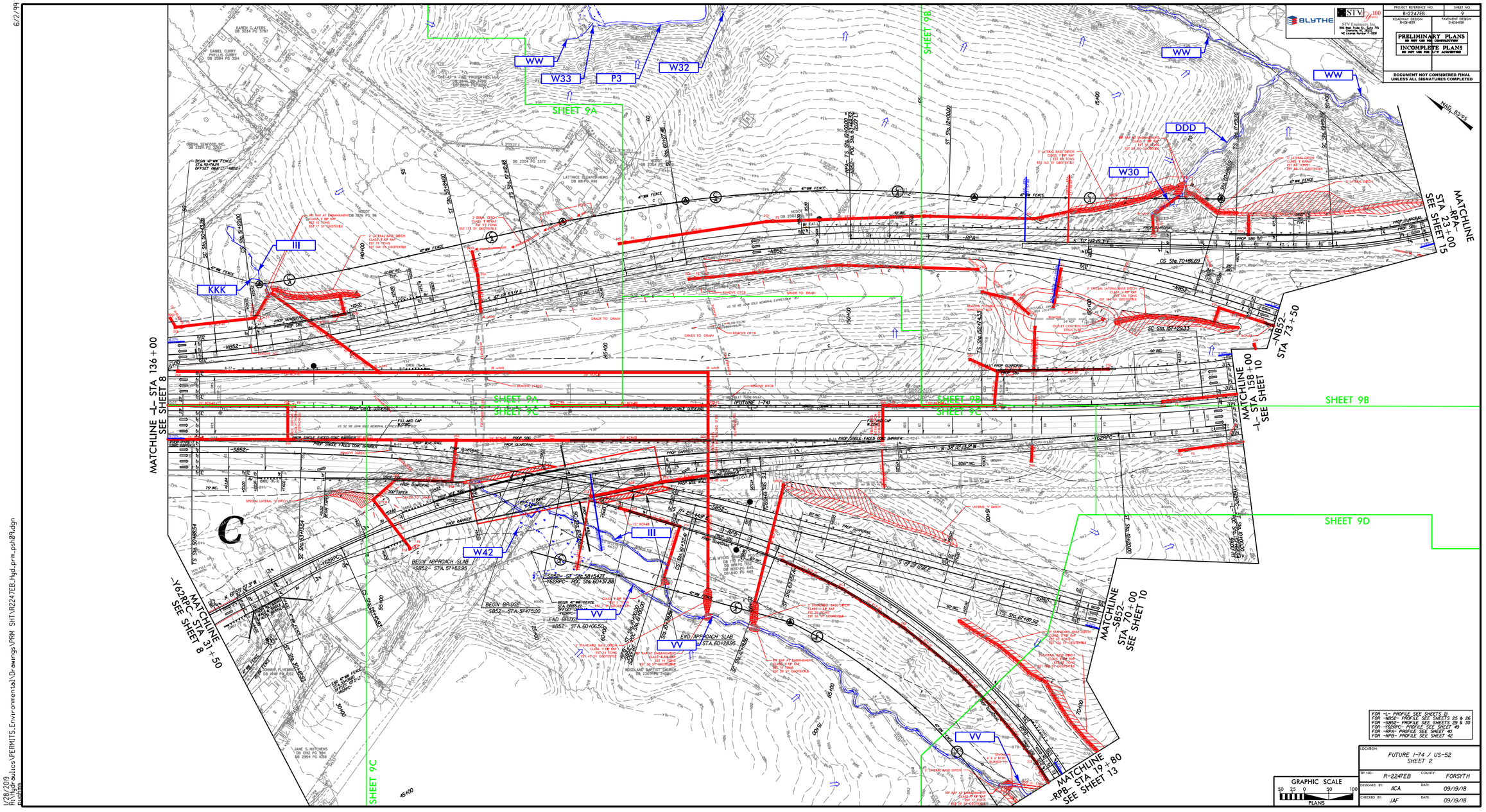

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drawings

PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	9-A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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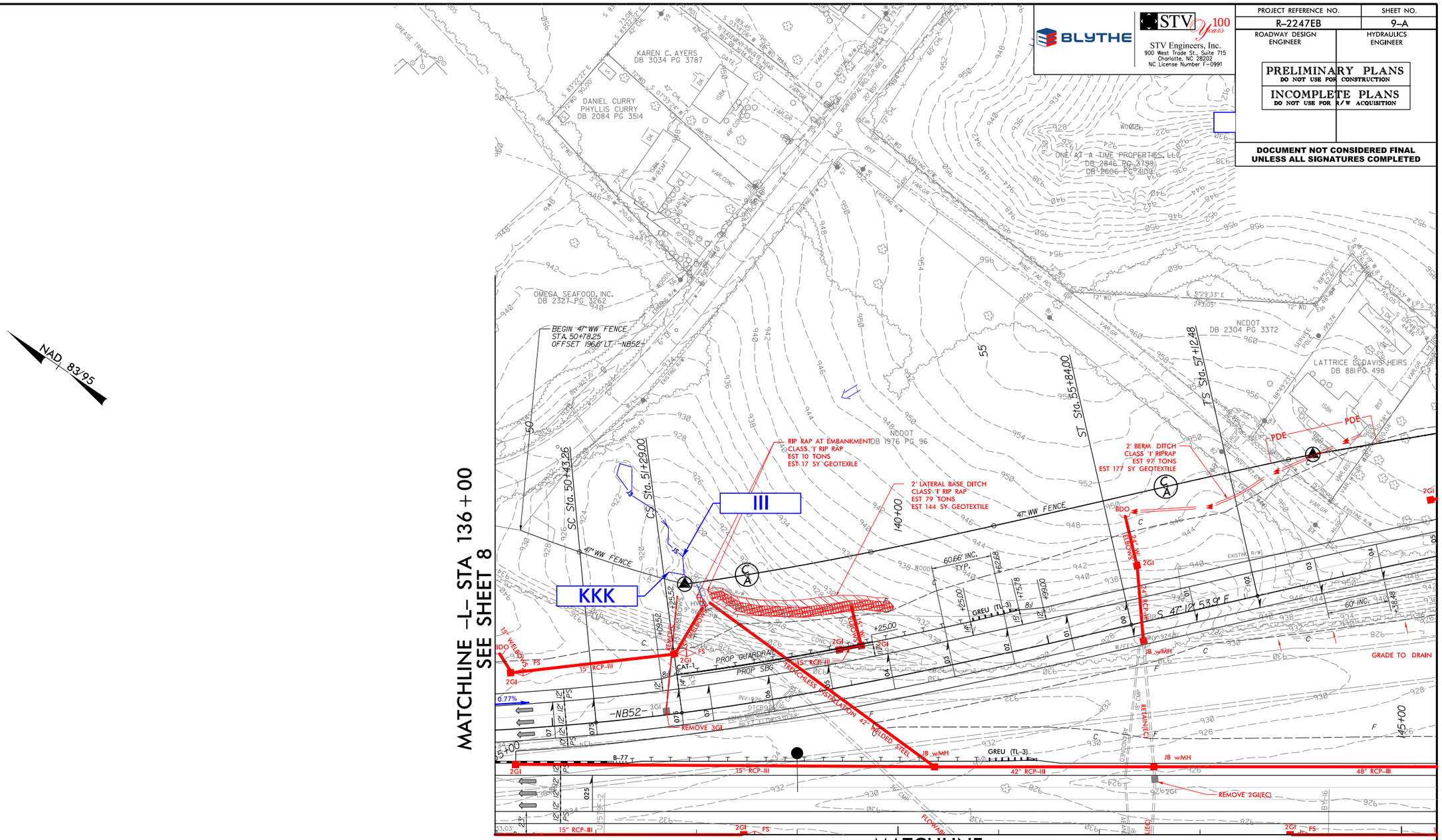

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	9-B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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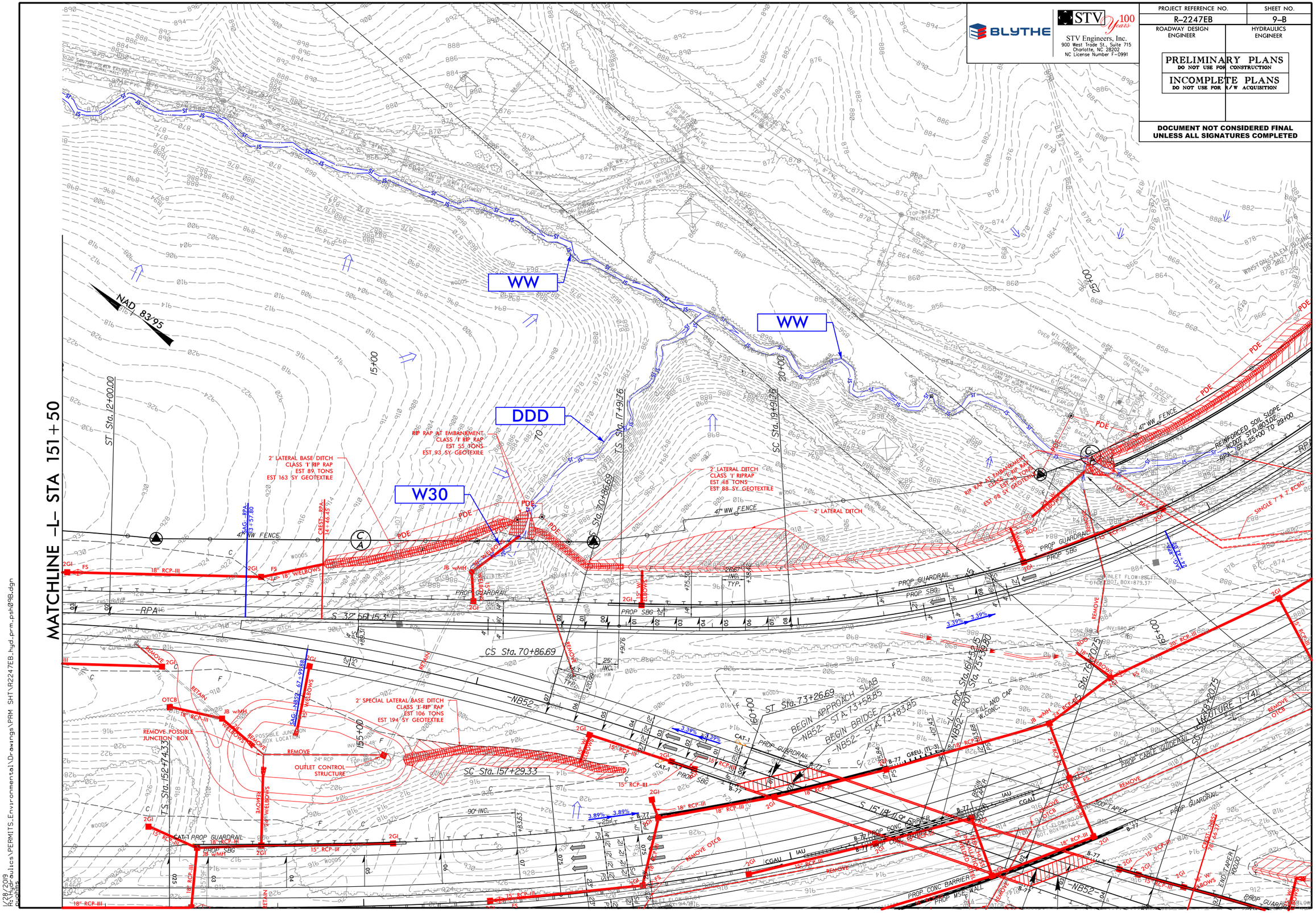

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	9-C
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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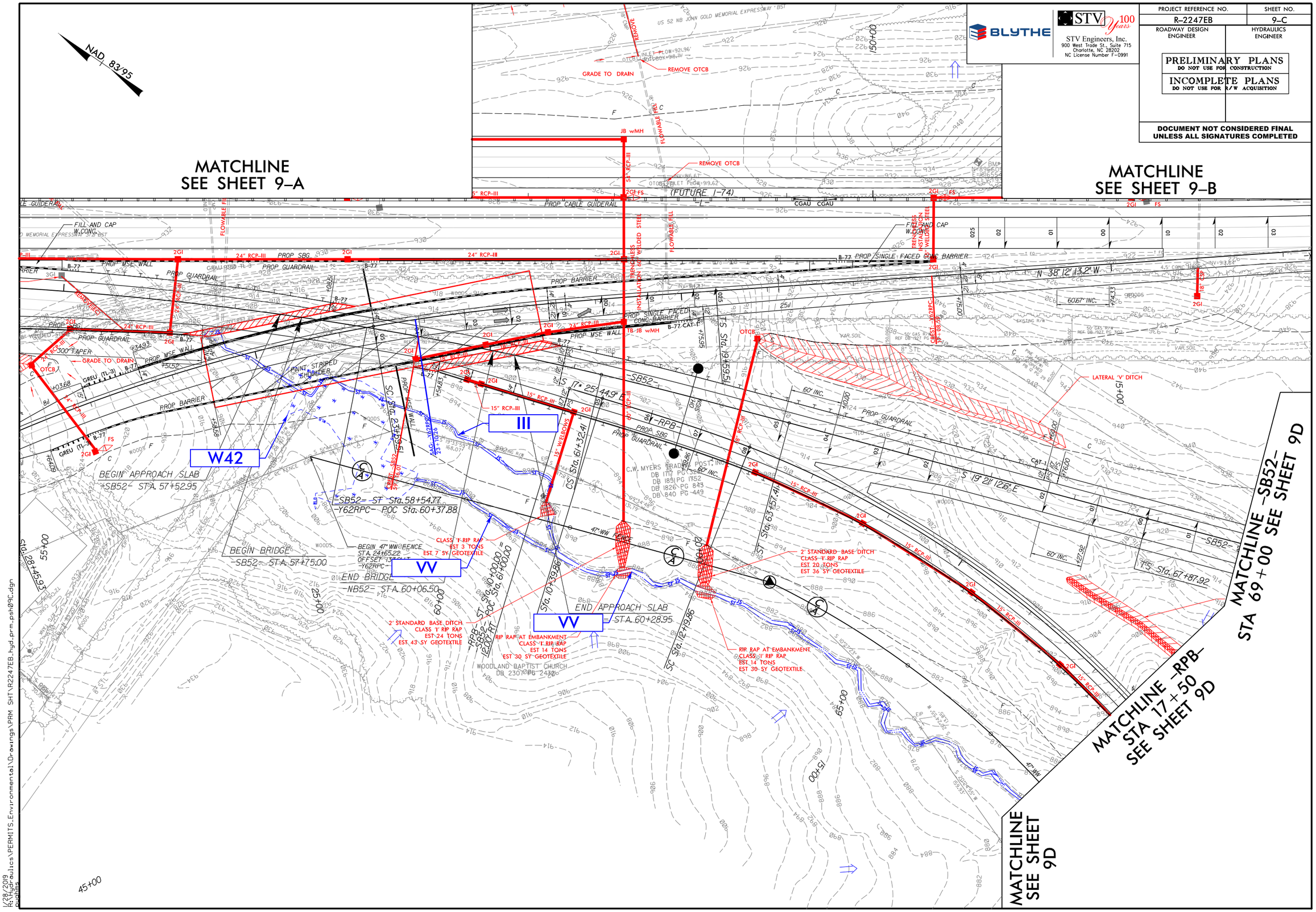

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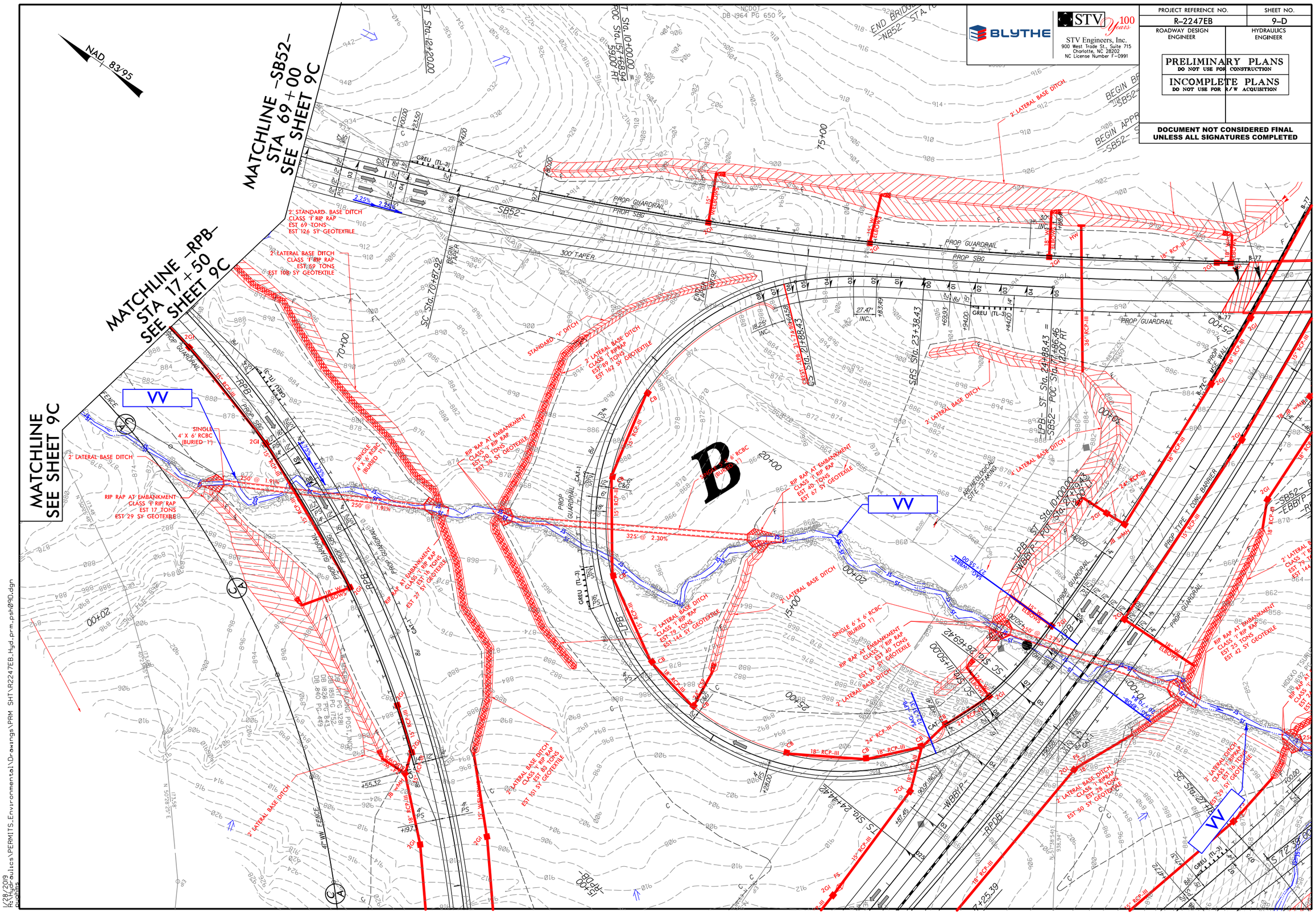
NAD 83/95
MATCHLINE -SB52- STA 69+00 SEE SHEET 9C
MATCHLINE -RPB- STA 17+50 SEE SHEET 9C
MATCHLINE -LPB- SEE SHEET 9C
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STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991
PROJECT REFERENCE NO.
R-2247EB
SHEET NO.
9-D
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
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INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
2' STANDARD BASE DITCH CLASS 'I' RIP RAP EST 69 TONS EST 126 SY GEOTEXTILE
2' LATERAL BASE DITCH CLASS 'I' RIP RAP EST 69 TONS EST 108 SY GEOTEXTILE
2' LATERAL BASE DITCH
RIP RAP AT EMBANKMENT CLASS 'I' RIP RAP EST 17 TONS EST 29 SY GEOTEXTILE
SINGLE 4' X 6' RCBC (BURIED 1')
250' @ 1.91%
325' @ 2.30%
PROP GUARDRAIL
PROP SBG
300' TAPER
STANDARD 'V' DITCH
2' LATERAL BASE DITCH CLASS 'I' RIP RAP EST 89 TONS EST 162 SY GEOTEXTILE
RIP RAP AT EMBANKMENT CLASS 'I' RIP RAP EST 20 TONS EST 30 SY GEOTEXTILE
RIP RAP AT EMBANKMENT CLASS 'I' RIP RAP EST 40 TONS EST 61 SY GEOTEXTILE
2' LATERAL BASE DITCH CLASS 'I' RIP RAP EST 19 TONS EST 144 SY GEOTEXTILE
RIP RAP AT EMBANKMENT CLASS 'I' RIP RAP EST 40 TONS EST 67 SY GEOTEXTILE
2' LATERAL BASE DITCH CLASS 'I' RIP RAP EST 83 TONS EST 151 SY GEOTEXTILE
2' LATERAL BASE DITCH CLASS 'I' RIP RAP EST 25 TONS EST 42 SY GEOTEXTILE
2' LATERAL BASE DITCH CLASS 'I' RIP RAP EST 78 TONS EST 50 SY GEOTEXTILE
RIP RAP AT EMBANKMENT CLASS 'I' RIP RAP EST 25 TONS EST 42 SY GEOTEXTILE
B
W
NCDOT DB 1964 PG 650
DB 1826 PG 843
DB 1815 PG 1752
DB 1826 PG 843
DB 840 PG 449
PROP TYPE T CONC BARRIER
PROP GUARDRAIL
GREU (TL-3)
CAT-1
18" RCP-III
15" RCP-III
24" RCP-III
30" RCP-III
36" RCP-III
2GI
CB
JS
FS
FENCE
BEGIN APPR -SB52-
END BRIDGE -NB52- STA. 70
SC Sta. 70+87.92
SC Sta. 24+34.40
SC Sta. 27+70.45
SC Sta. 11+50.00
SC Sta. 10+00.00
SC Sta. 12+00.00
SC Sta. 23+38.43
SRS Sta. 23+38.43 = -LPB- ST Sta. 23+88.43 = -SB52- POC Sta. 77+86.46 42.00' RT
SRS Sta. 24+34.40 = -WBBYP- ST Sta. 10+00.00 = -SB52- POC Sta. 27+70.45 5.00' LT
SRS Sta. 27+70.45 = -WBBYP- POC Sta. 26+69.42 5.00' RT
SRS Sta. 26+69.42 = -WBBYP- ST Sta. 11+50.00 = -SB52- POC Sta. 57+68.94 5.00' RT
-LPB- -RPB- -WBBYP- -SB52-
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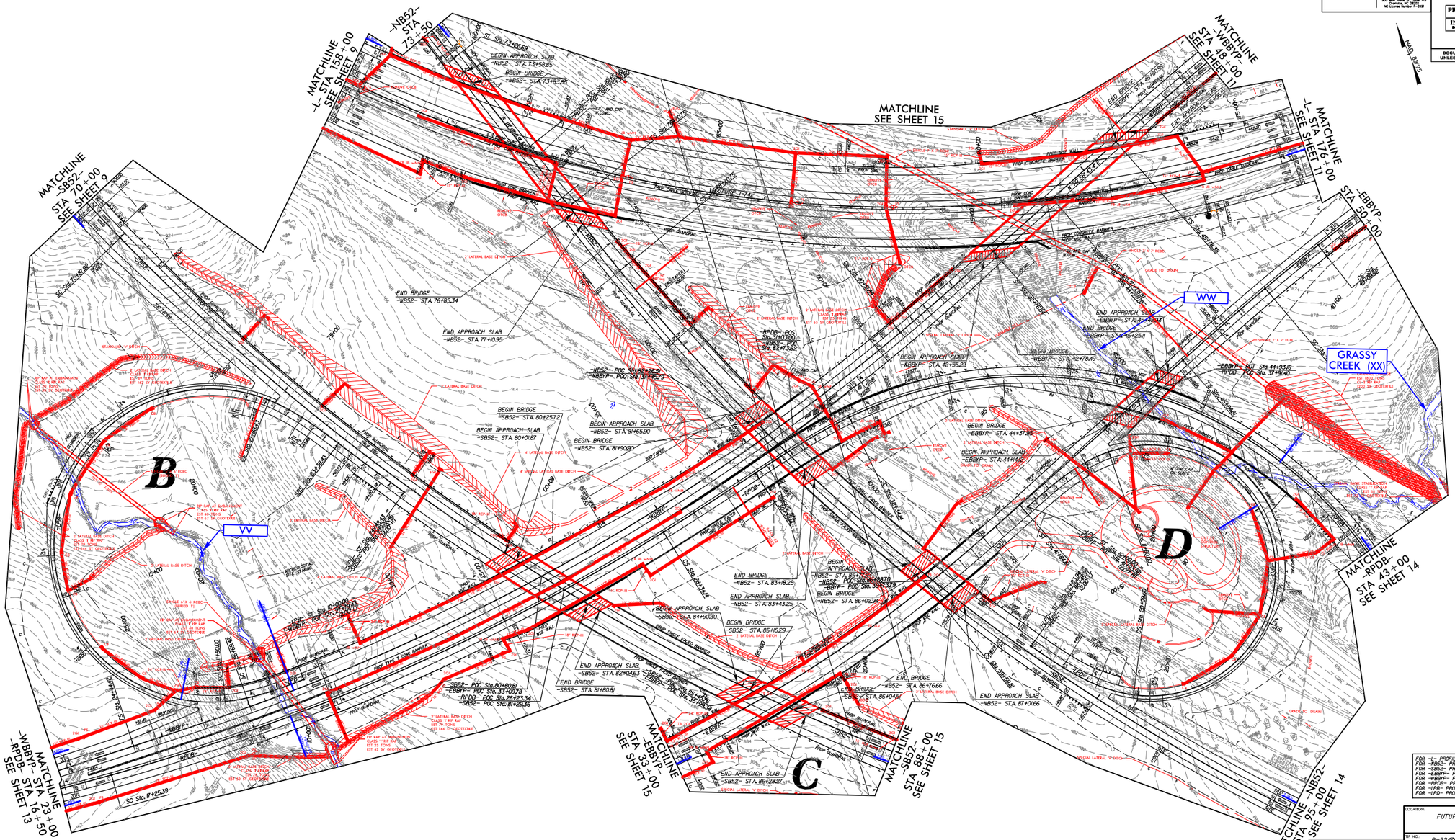
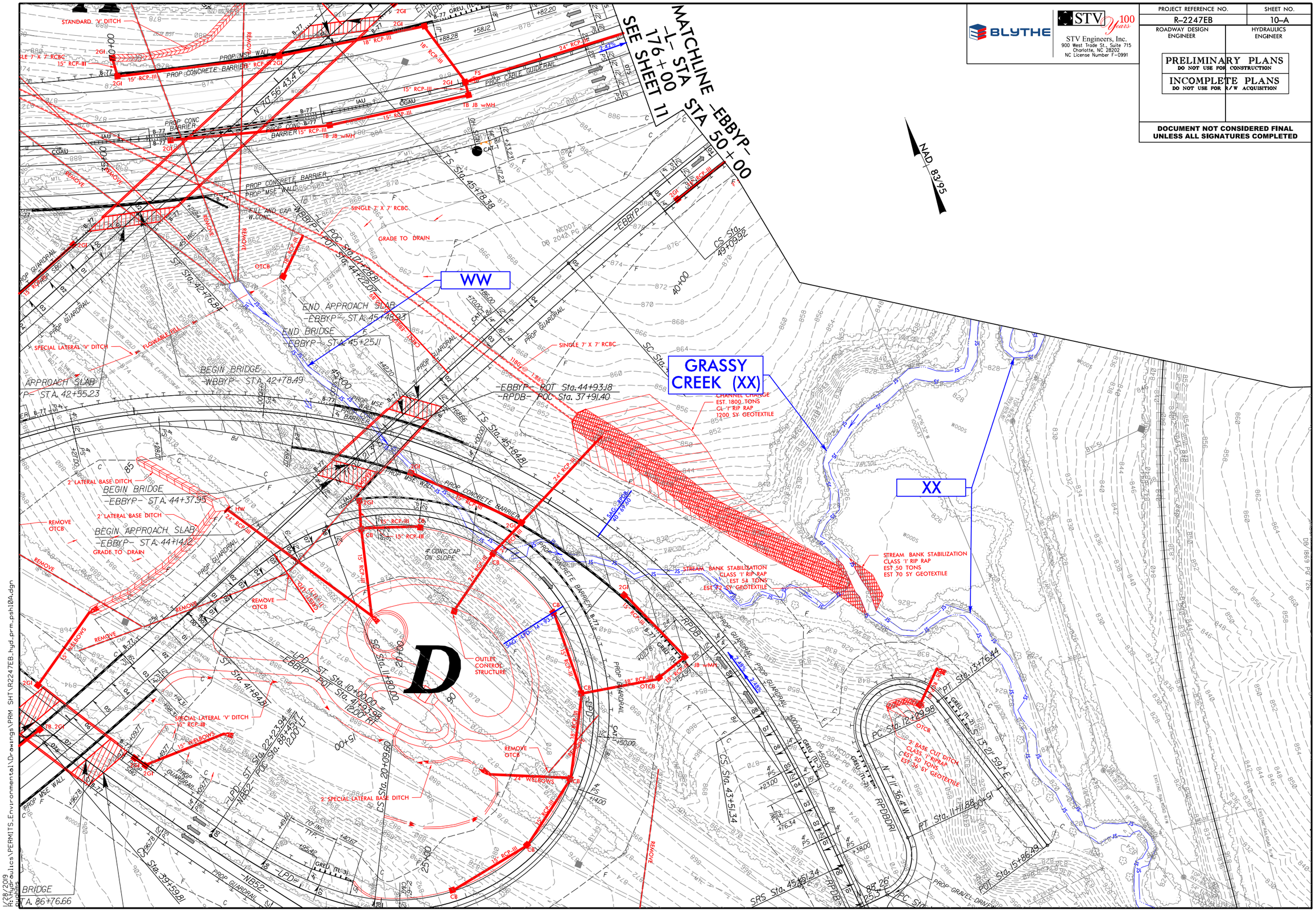

MATCHLINE -L- STA 158+00 SEE SHEET 9
-NB52- STA 73+50
MATCHLINE SEE SHEET 15
MATCHLINE -WBBYP- STA 48+00 SEE SHEET 11
MATCHLINE -L- STA 176+00 SEE SHEET 11
-EBBYP- STA 50+00
MATCHLINE -SB52- STA 70+00 SEE SHEET 9
MATCHLINE -RPDB- STA 43+00 SEE SHEET 14
MATCHLINE -WBBYP- STA 23+00 -RPDB- STA 16+50 SEE SHEET 13
MATCHLINE -EBBYP- STA 33+00 SEE SHEET 15
MATCHLINE -SB52- STA 88+00 SEE SHEET 15
MATCHLINE -NB52- STA 95+00 SEE SHEET 14
B
C
D
WW
GRASSY CREEK (XX)
BEGIN APPROACH SLAB -NB52- STA 73+58.35
BEGIN BRIDGE -NB52- STA 73+83.35
END BRIDGE -NB52- STA 76+85.34
END APPROACH SLAB -NB52- STA 77+10.95
BEGIN BRIDGE -SB52- STA 80+25.72
BEGIN APPROACH SLAB -SB52- STA 80+50.87
BEGIN APPROACH SLAB -NB52- STA 81+65.90
BEGIN BRIDGE -NB52- STA 81+90.80
END BRIDGE -NB52- STA 83+18.25
END APPROACH SLAB -NB52- STA 83+43.25
BEGIN APPROACH SLAB -SB52- STA 84+90.30
BEGIN BRIDGE -SB52- STA 85+15.29
END APPROACH SLAB -SB52- STA 82+04.63
END BRIDGE -SB52- STA 81+80.81
END BRIDGE -NB52- STA 86+76.66
END APPROACH SLAB -NB52- STA 87+01.66
END APPROACH SLAB -SB52- STA 86+28.27
END BRIDGE -EBBYP- STA 44+03.38
END APPROACH SLAB -EBBYP- STA 44+28.38
BEGIN BRIDGE -WBBYP- STA 42+78.49
BEGIN APPROACH SLAB -WBBYP- STA 42+55.23
BEGIN BRIDGE -EBBYP- STA 44+31.38
BEGIN APPROACH SLAB -EBBYP- STA 44+14.42
-EBBYP- POT Sta.44+03.38
-RPDB- POC Sta. 37+19.40
-SB52- POC Sta.80+80.81
-EBBYP- POC Sta.33+01.78
-RPDB- POC Sta.86+83.14
-SB52- POC Sta.81+80.81
-SB52- POC Sta.80+80.81
-EBBYP- POC Sta.33+01.78
-RPDB- POC Sta.86+83.14
-SB52- POC Sta.81+80.81
-SB52- POC Sta.86+76.66
-EBBYP- POC Sta.44+03.38
-SB52- POC Sta.86+76.66
-SB52- POC Sta.87+01.66
-SB52- POC Sta.86+28.27
-SB52- POC Sta.86+28.27
-SB52- POC Sta.86+28.27



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Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	10-A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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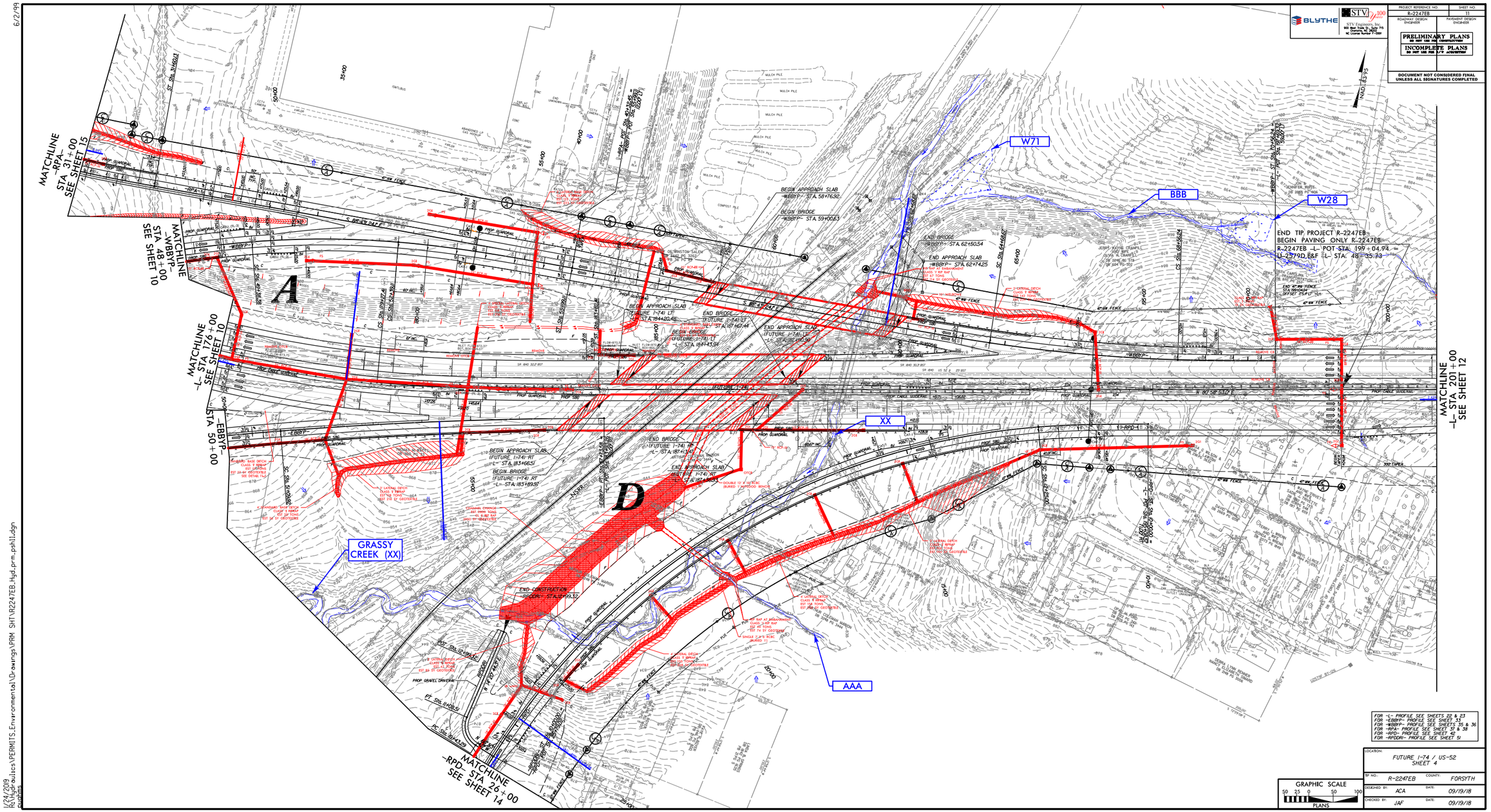
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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Oklahoma, NC 28027
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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	11
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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NAD 83/95

FOR -L- PROFILE SEE SHEETS 22 & 23
FOR -EBBYP- PROFILE SEE SHEET 33
FOR -WBBYP- PROFILE SEE SHEETS 35 & 36
FOR -RPA- PROFILE SEE SHEET 37 & 38
FOR -RPD- PROFILE SEE SHEET 42
FOR -RPDDR- PROFILE SEE SHEET 51

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION: FUTURE I-74 / US-52 SHEET 4			
TIP NO.: R-2247EB		COUNTY: FORSYTH	
DESIGNED BY: ACA		DATE: 09/19/18	
CHECKED BY: JAF		DATE: 09/19/18	

6/2/99

1/24/2019
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pughms

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	11-A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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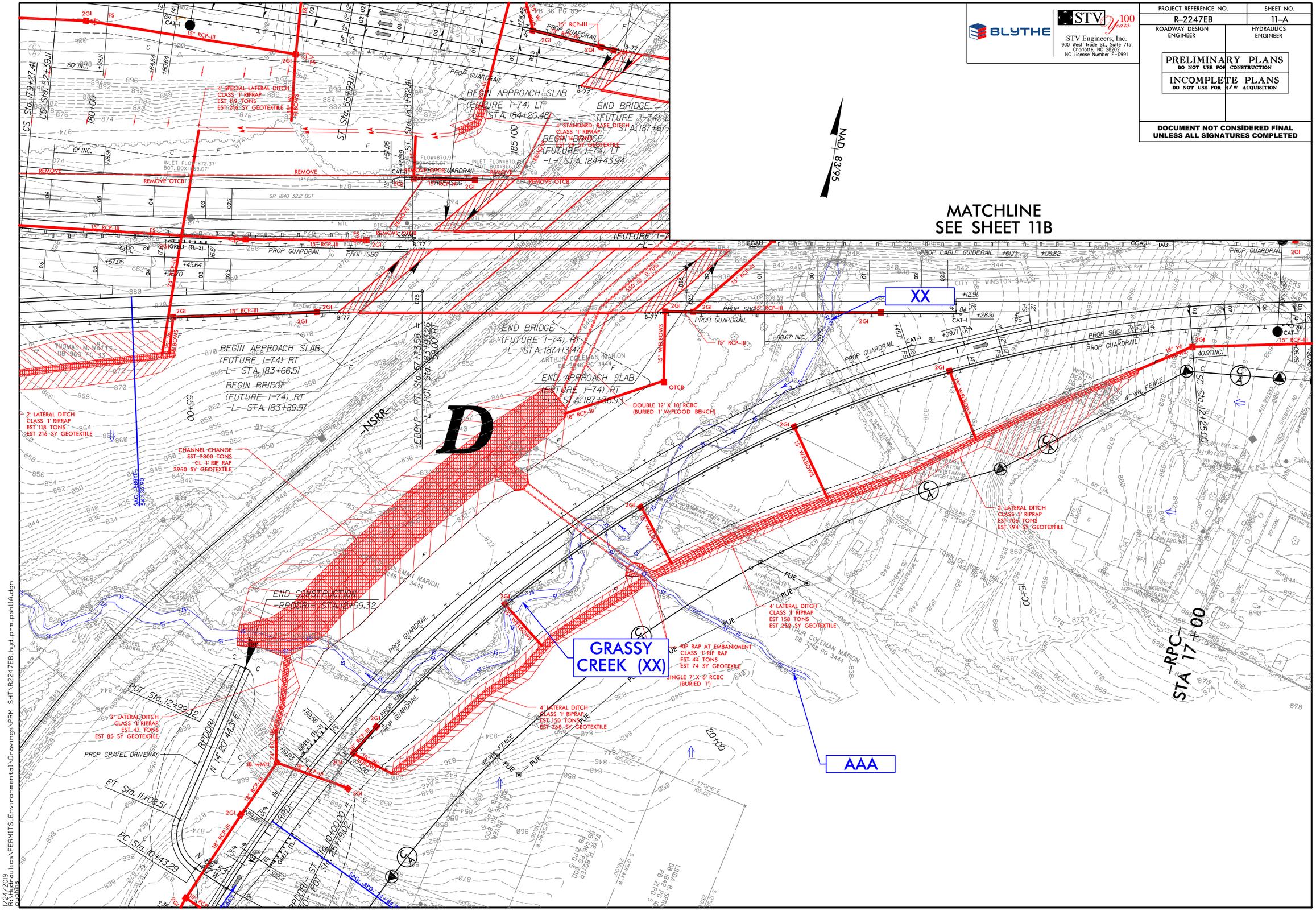

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	11-B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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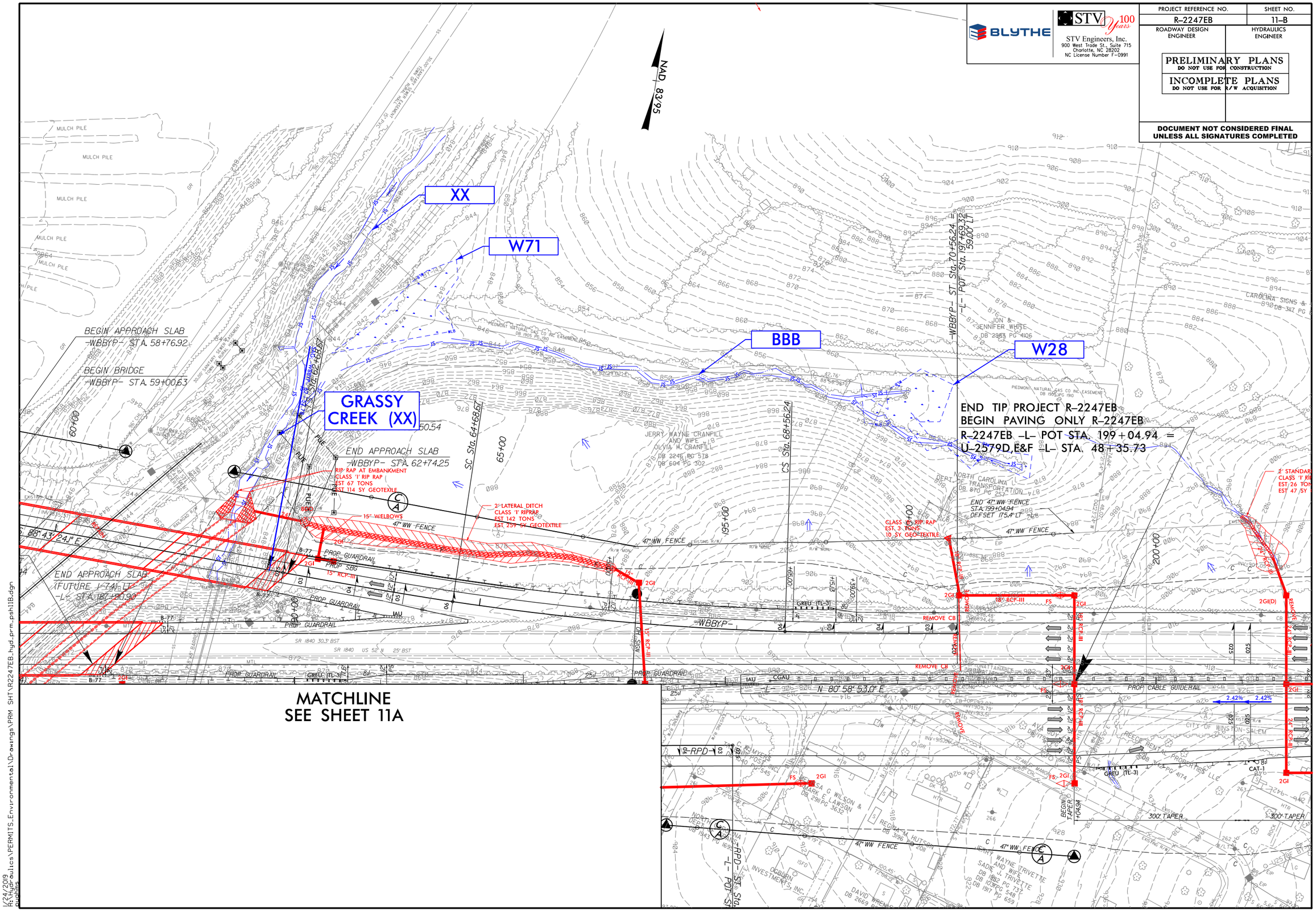

1/24/2019
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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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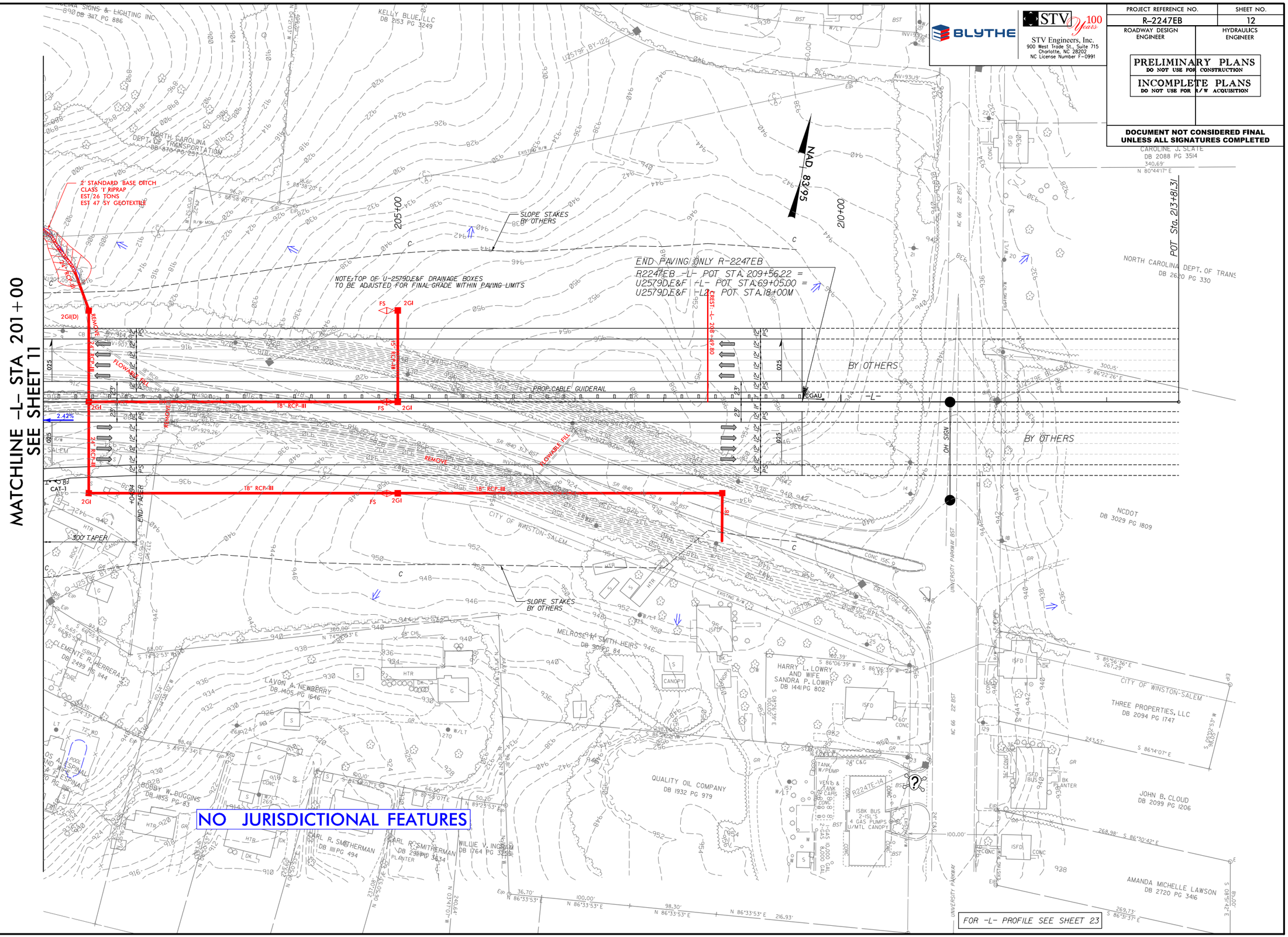
MATCHLINE -L- STA 201+00
SEE SHEET 11



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pughms

6/2/99

MATCHLINE
-RPB- STA 19+80
SEE SHEET 9
MATCHLINE
-WBBYP- STA 23+00
-RPDB- STA 16+50
SEE SHEET 10
MATCHLINE
-EBBYP-
STA 31+00
SEE SHEET 15
-RPC-
STA 17+00
BEGIN CONSTRUCTION
-WBBYP- STA.15+50.00
BEGIN CONSTRUCTION
-EBBYP- STA.31+50.00
BEGIN CONSTRUCTION
-EBBYP- STA.15+50.00
ARCHEOLOGICAL SITE 31-MW.160
W39
W40
W38
W37
W36
W44
W34
RR
W43
W35
VV
CITY OF WINSTON-SALEM
DB 1996 PG 3037
PHILLIP G. PENTZ
AND WIFE
KAREN WHITE PENTZ
DB 1991 PG 2038
DB 1991 PG 3024
JOHN W. VERNON
AND WIFE
HELEN VERNON
DB 898 PG 102
W. BOYCE MOORE
AND WIFE
DB 1993 PG 1
DB 1993 PG 3
ROGER L. DAVIS
AND WIFE
CONNIE P. DAVIS
DB 2145 PG 1406
DB 2189 PG 444
DB 2189 PG 446
MARTHA SL MARSHALL
DB 1468 PG 304
HEDEKO TSURUTA
DB 1892 PG 4288
S 85°30'00" E
S 85°30'00" E
S 78°24'00" E
S 78°24'00" E
S 87°19'27" E
S 87°19'27" E
S 87°19'27

PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	13-A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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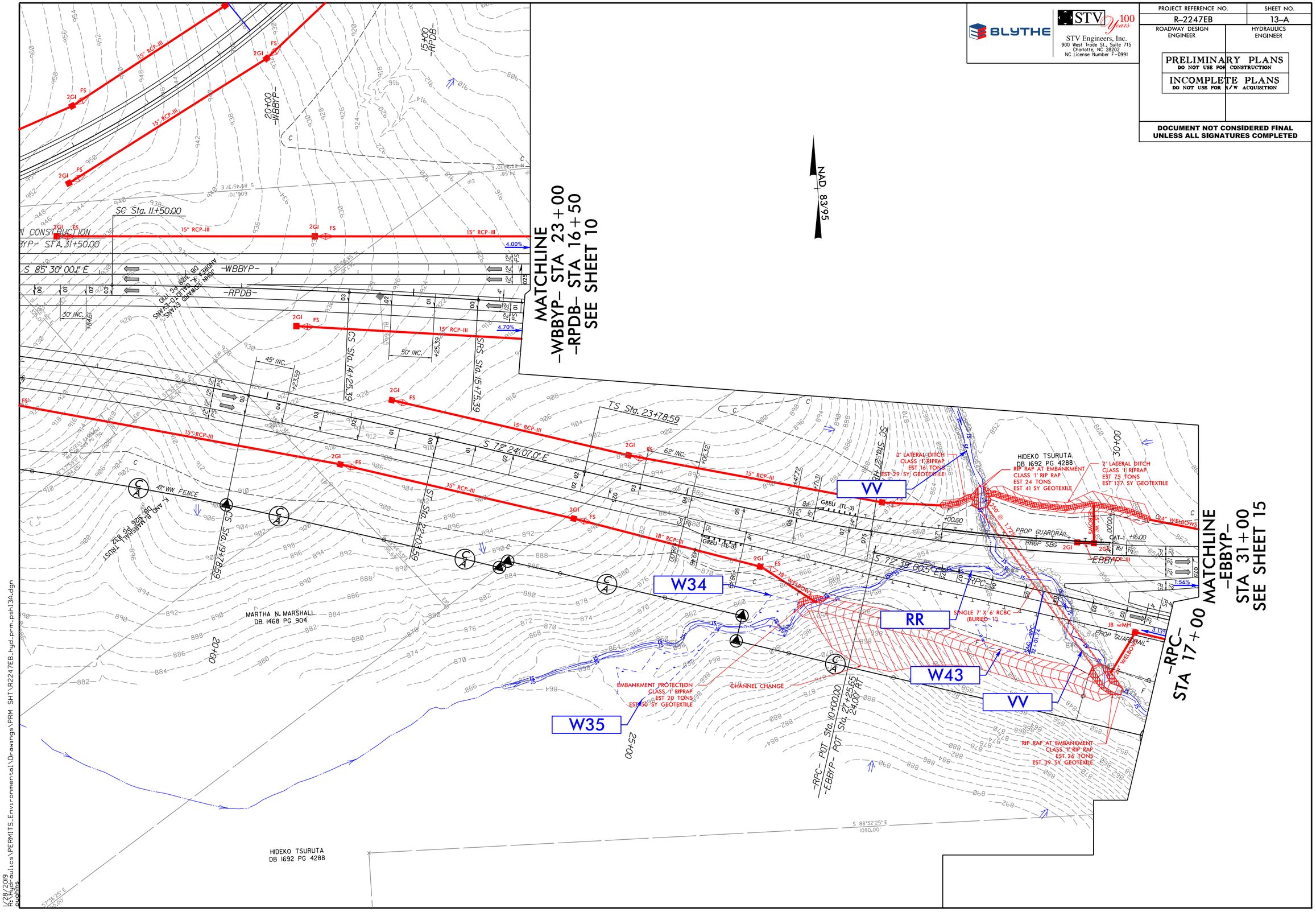

1/28/2019
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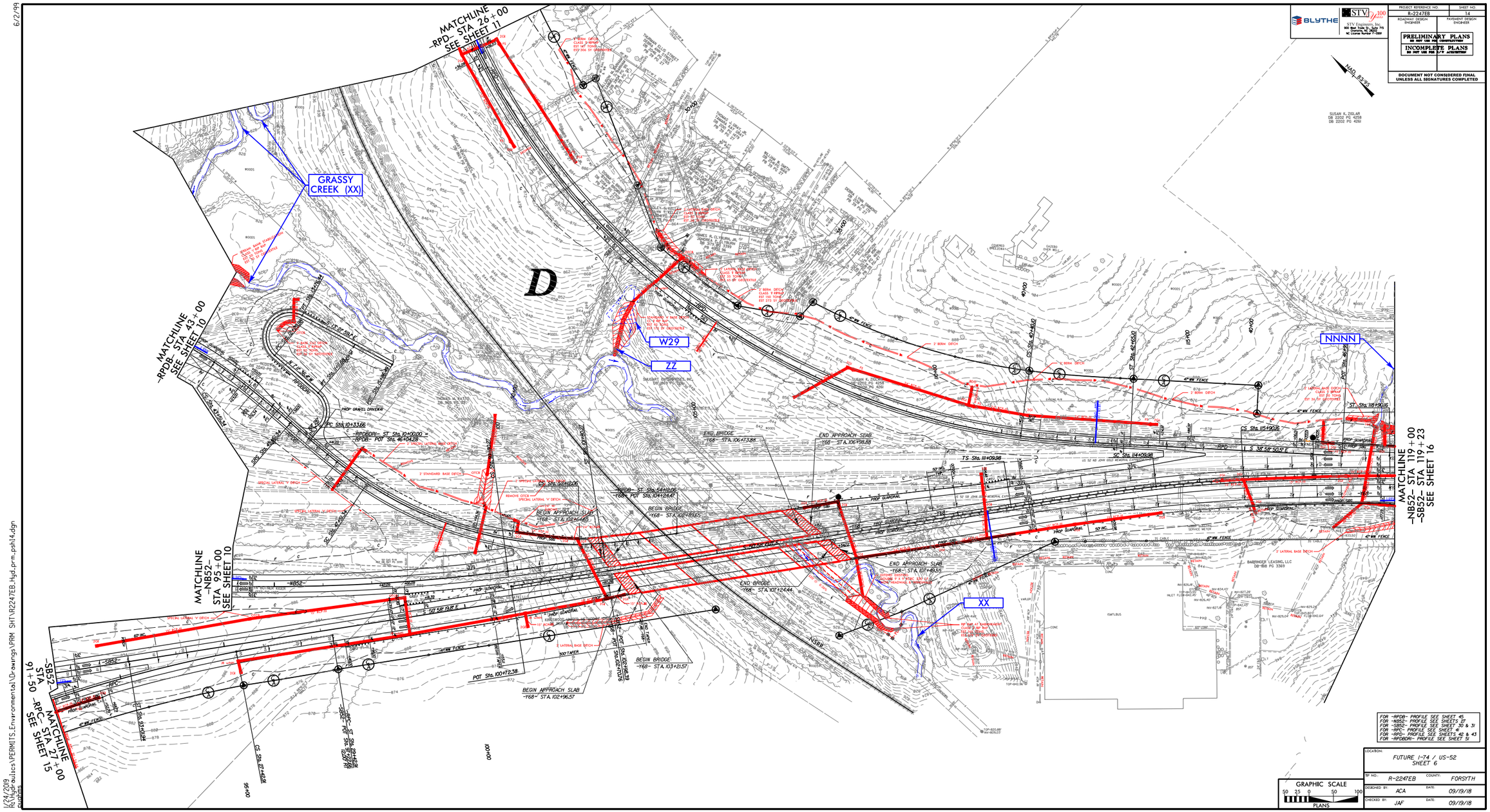

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pwphms

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	14-A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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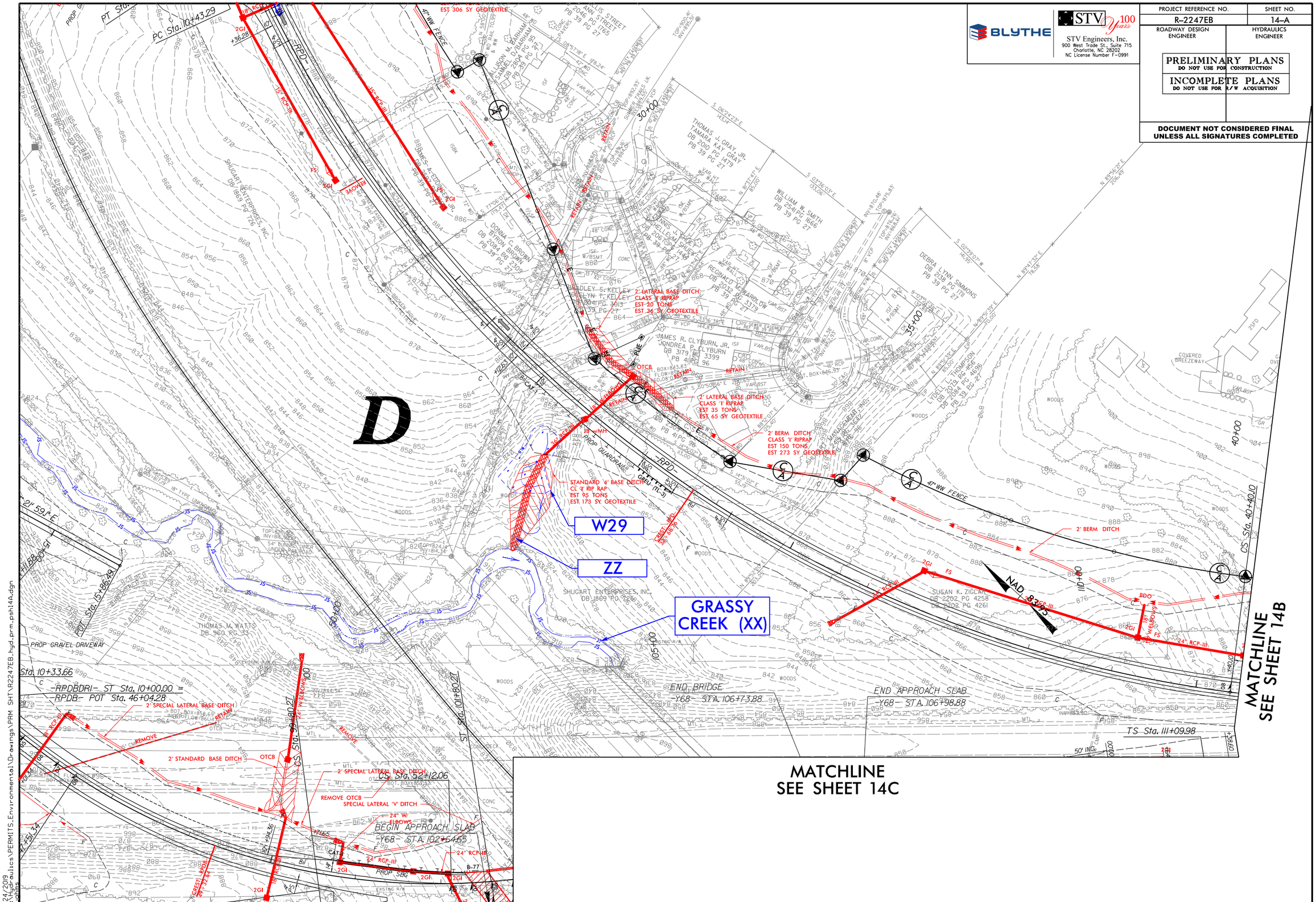
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	14-B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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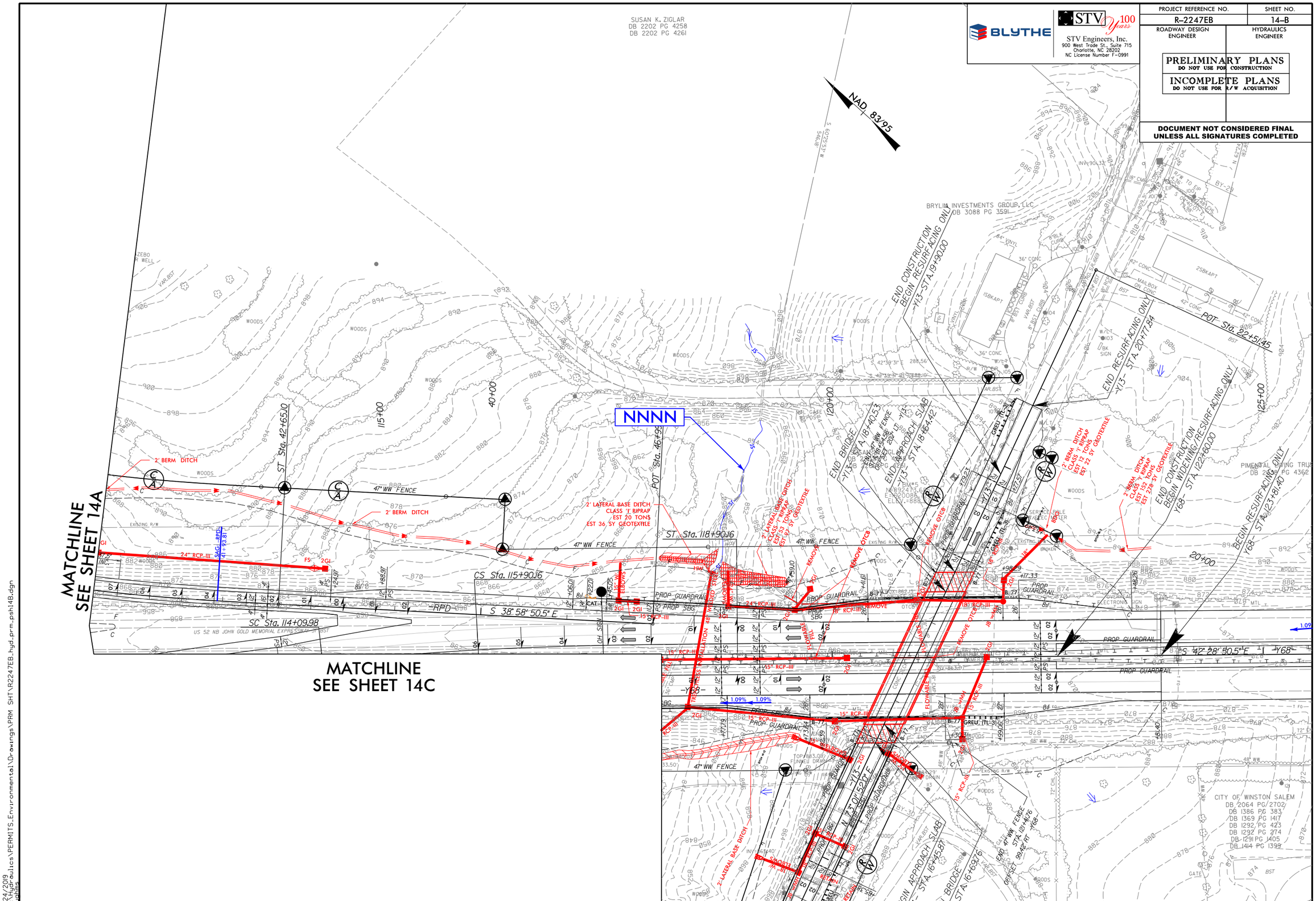

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pwhite

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	14-C
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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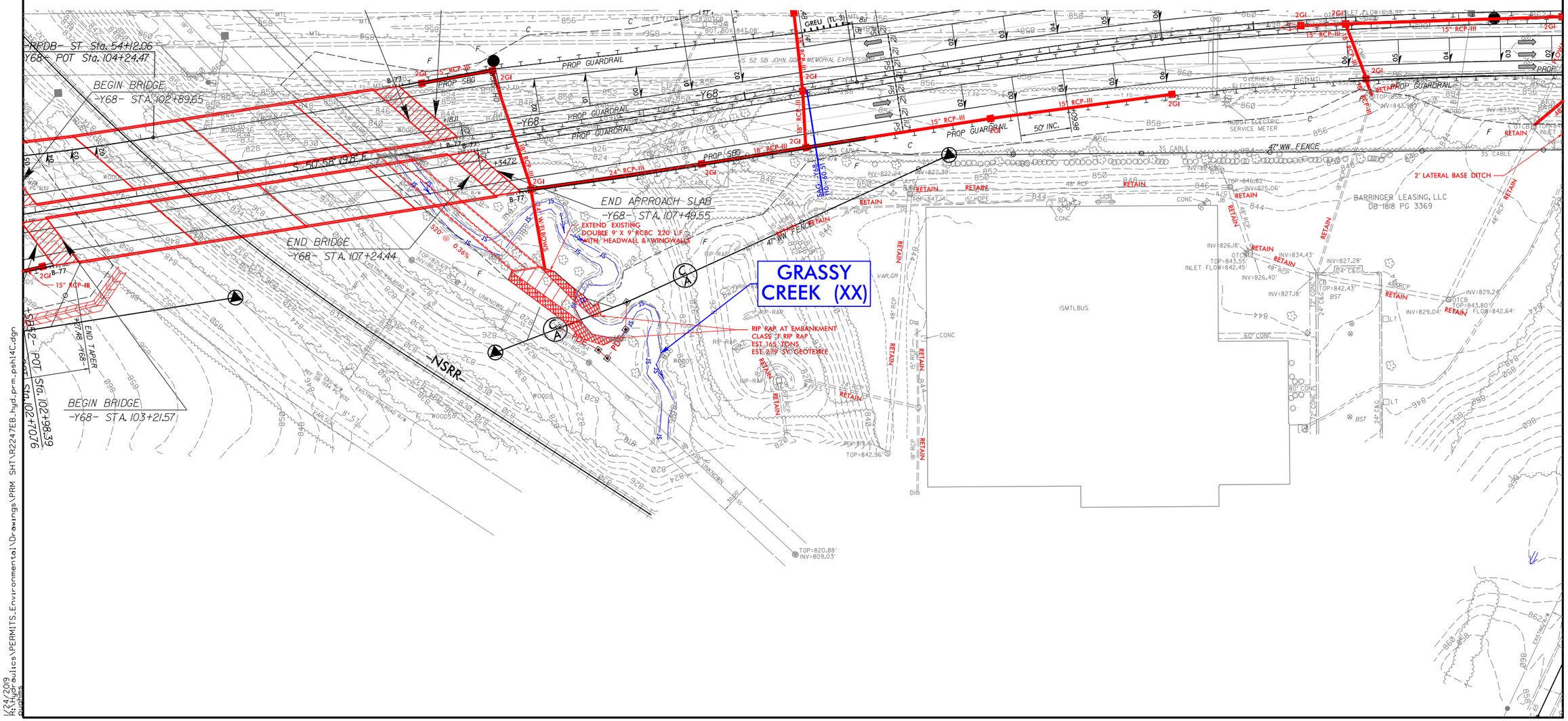
NAD 83/95

MATCHLINE
SEE SHEET 14A/14B



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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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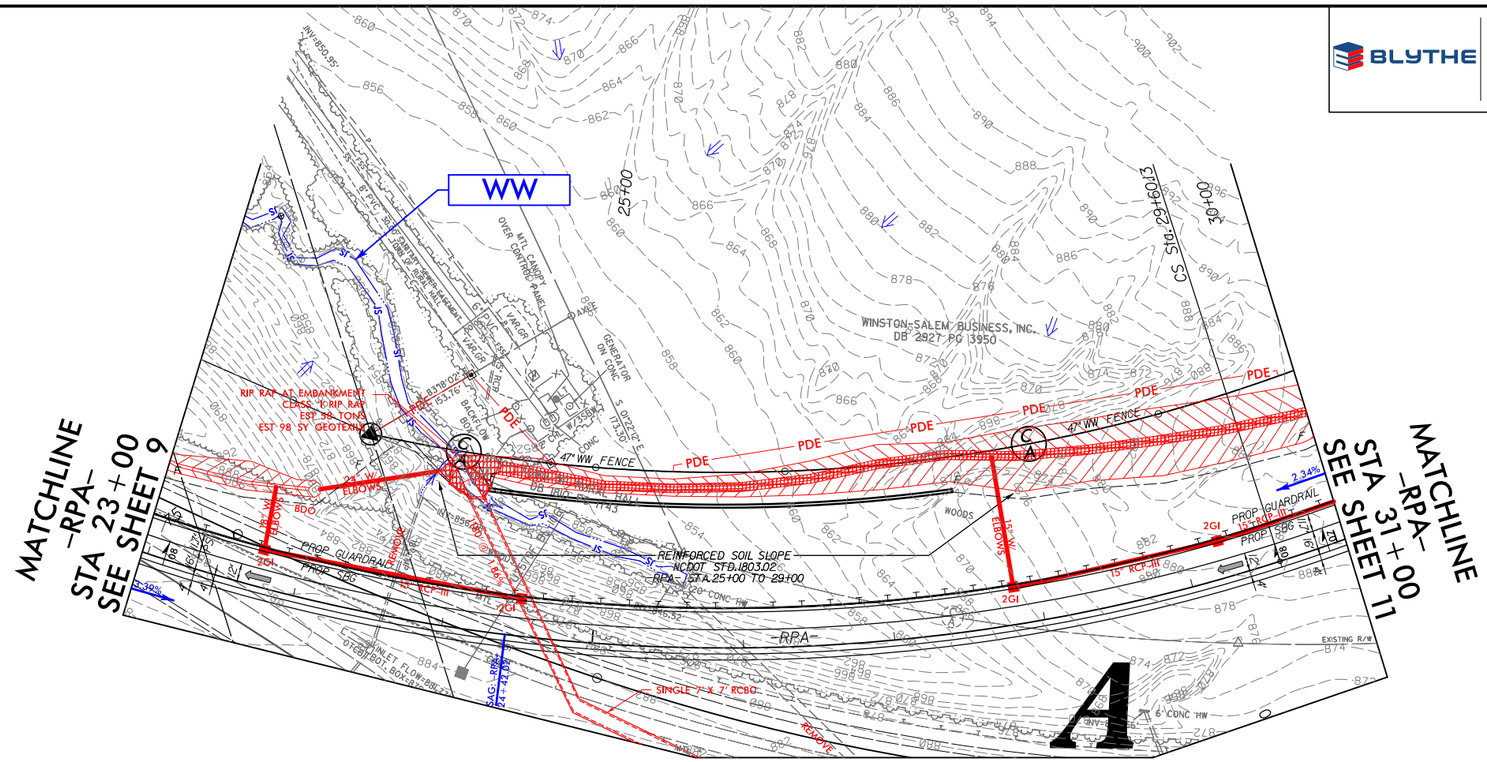
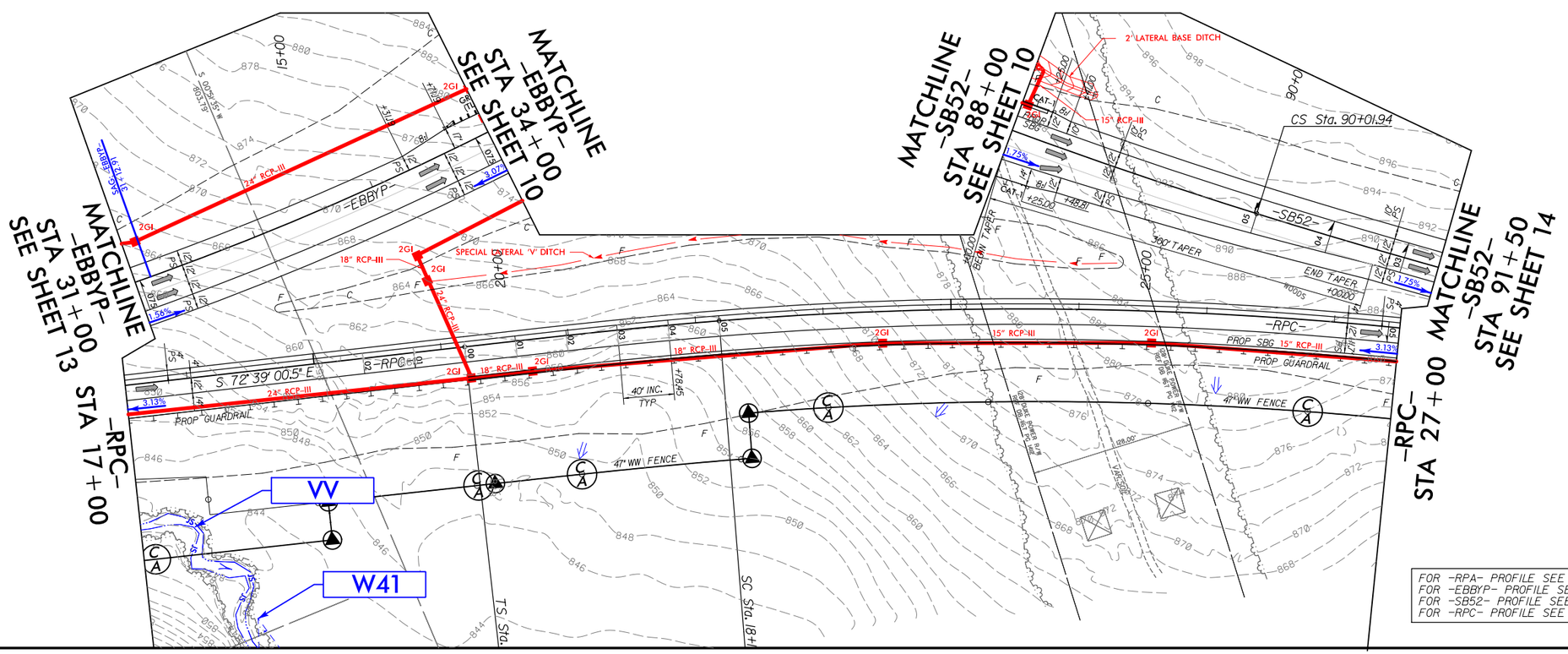


MATCHLINE SEE SHEET 10



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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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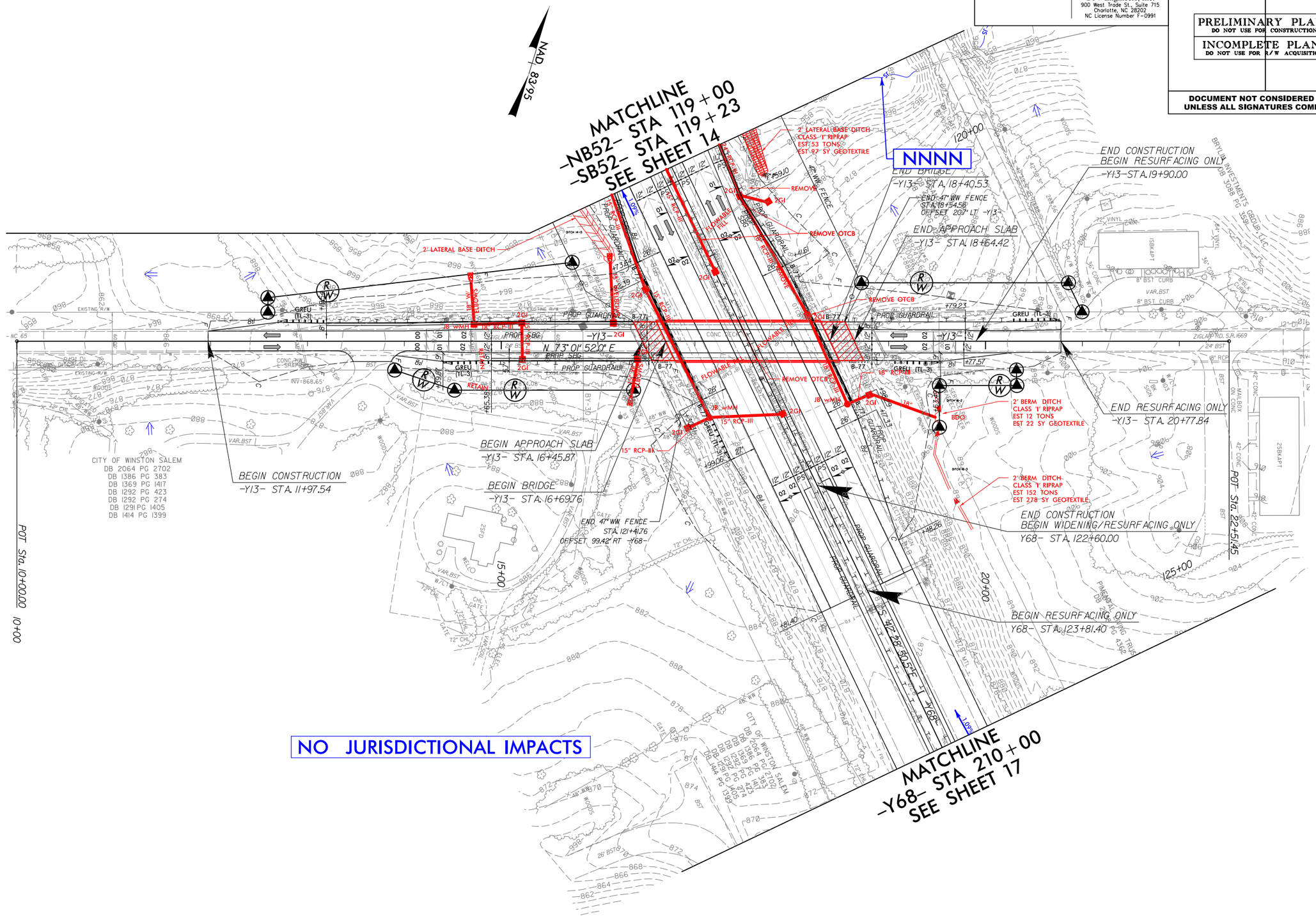

FOR -Y13- PROFILE SEE SHEET 46

1/24/2019
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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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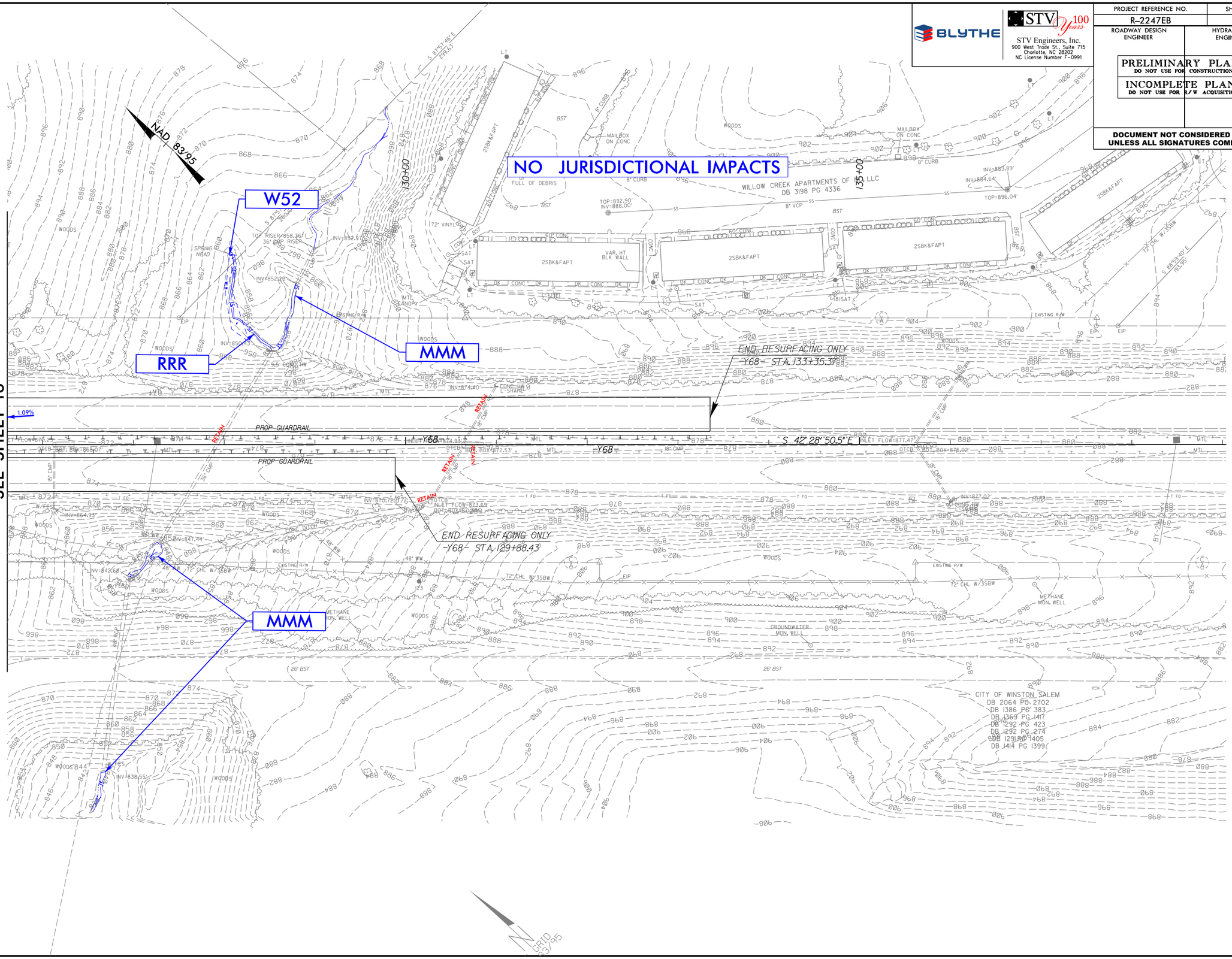

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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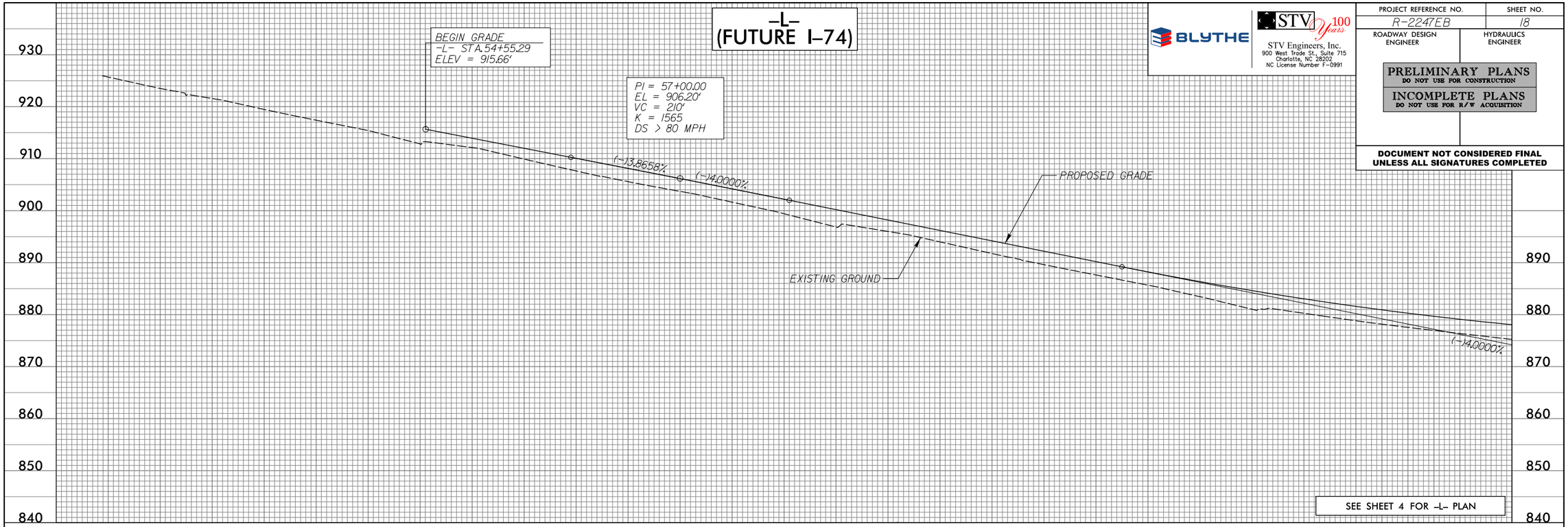
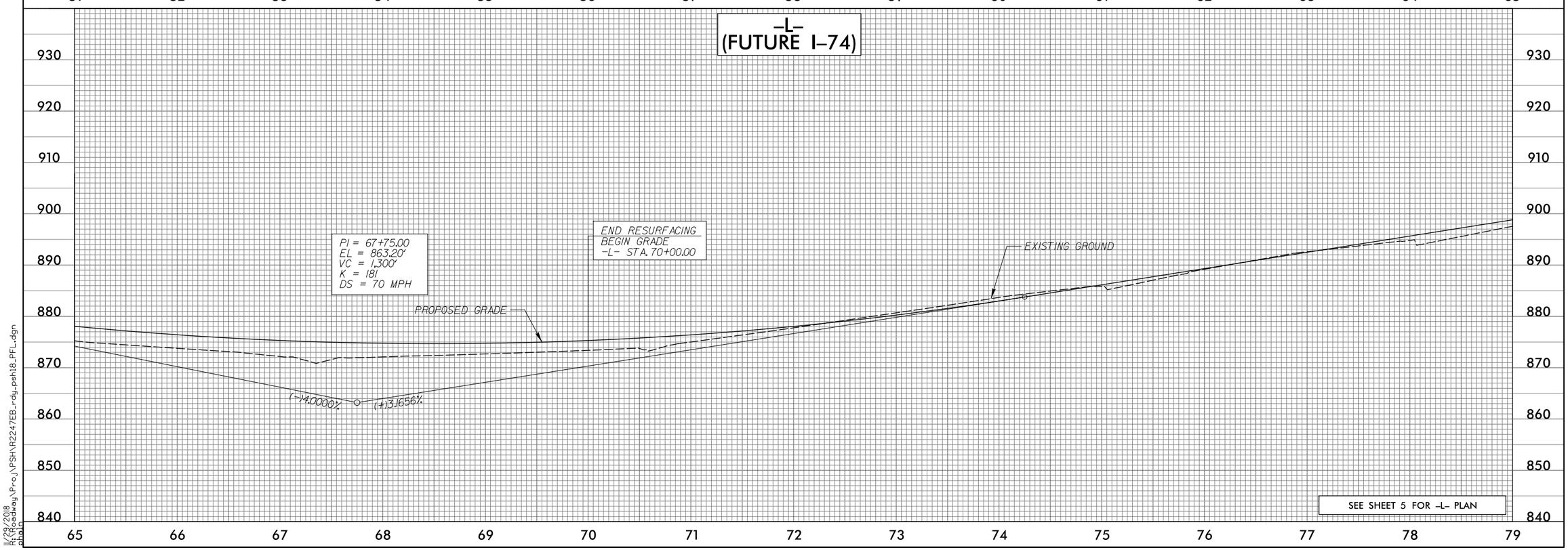


SEE SHEET 4 FOR -L- PLAN



SEE SHEET 5 FOR -L- PLAN

11/22/2018
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phale

PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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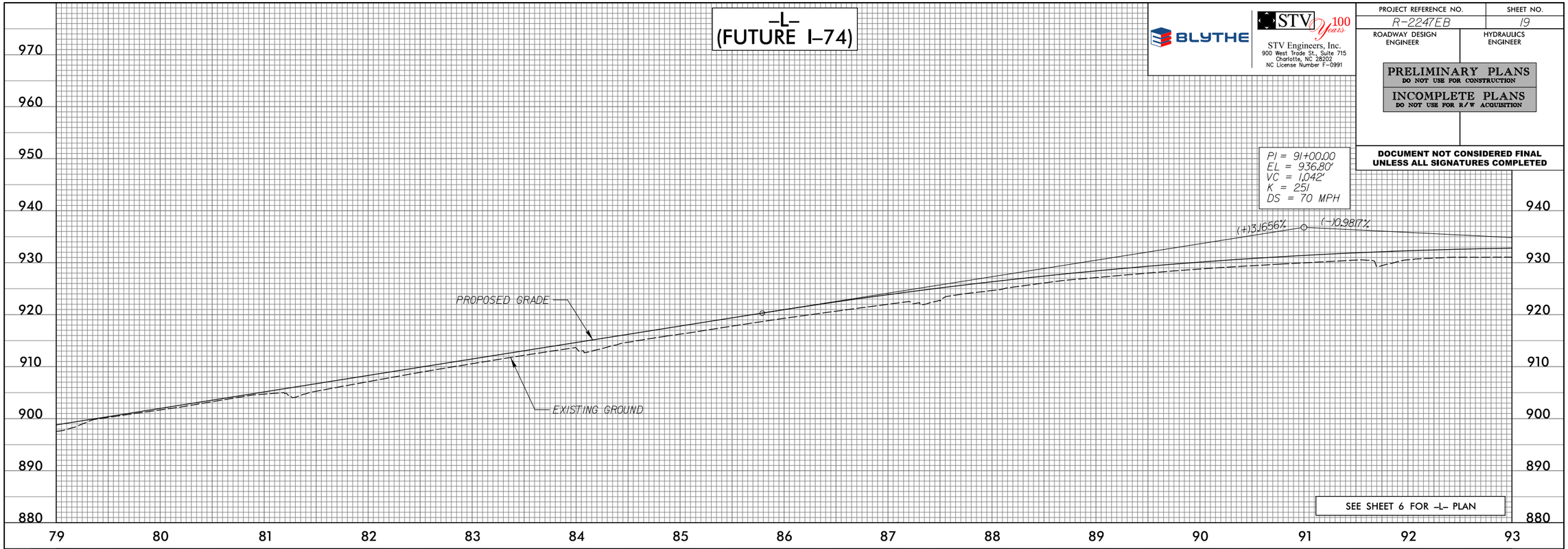

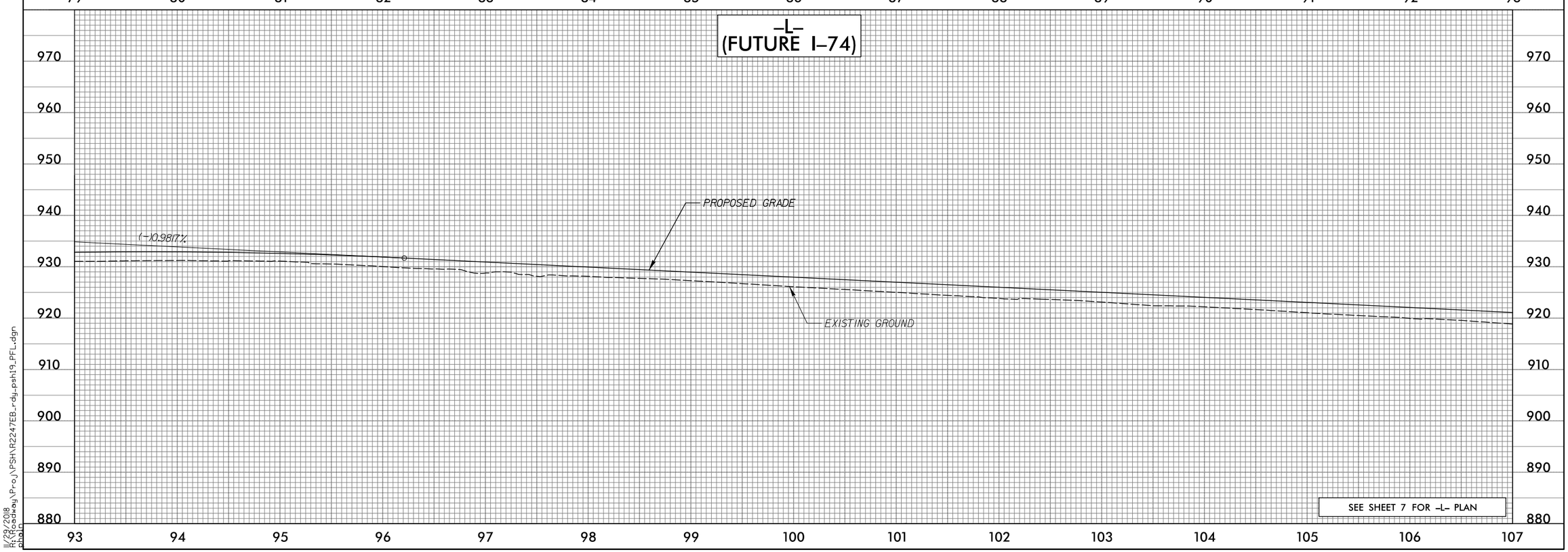

11/29/2018
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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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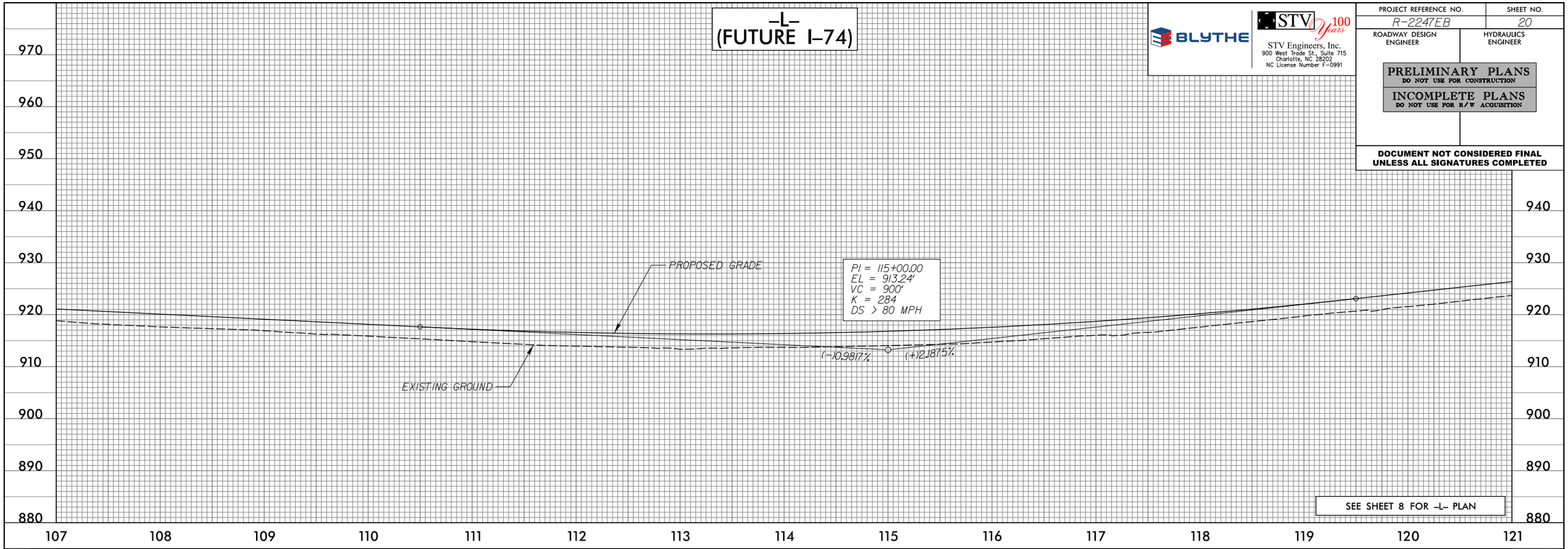

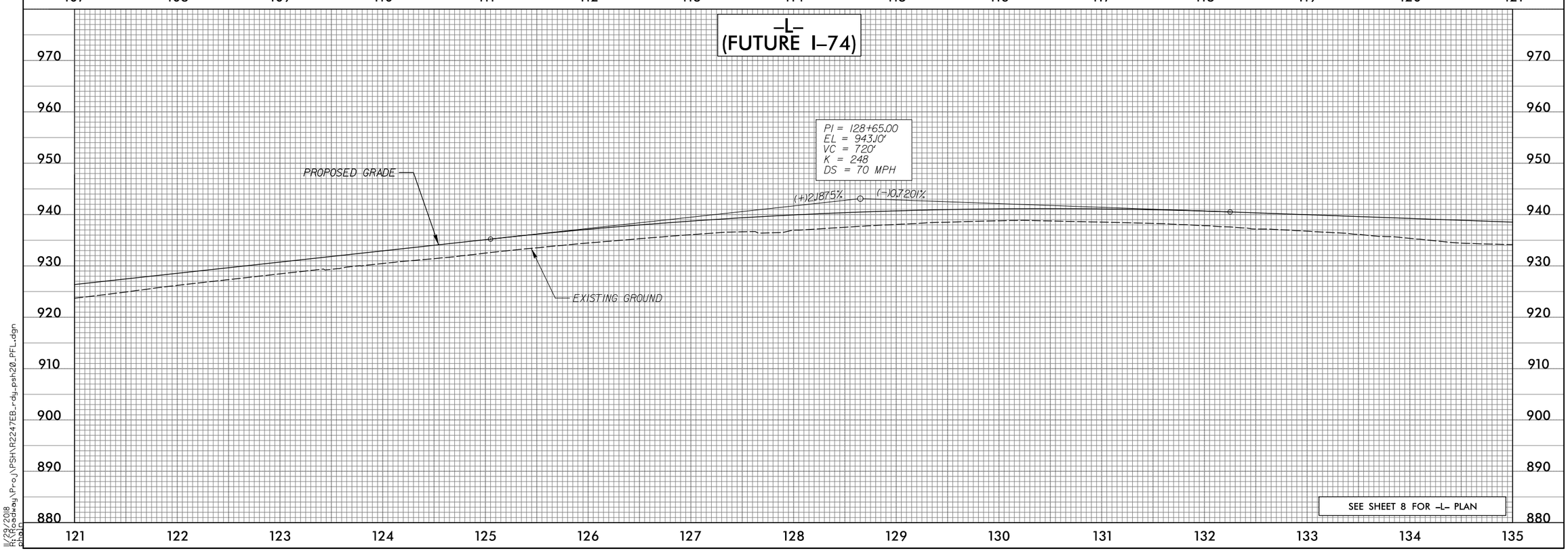

11/22/2016
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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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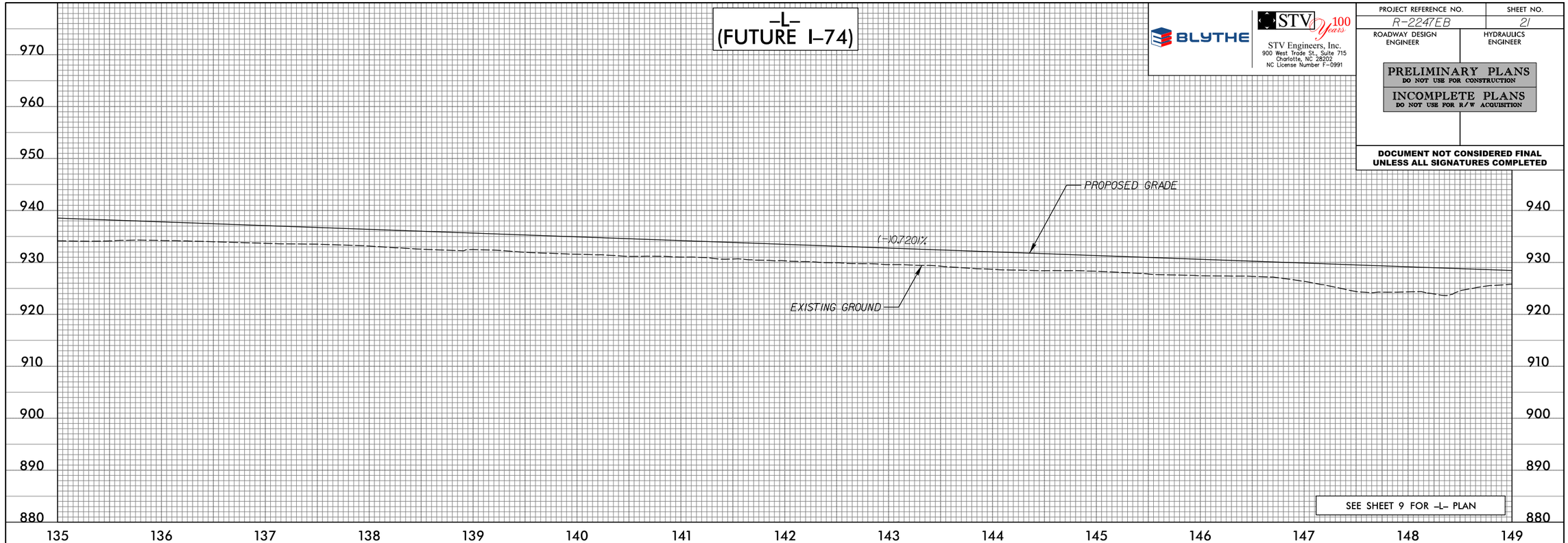

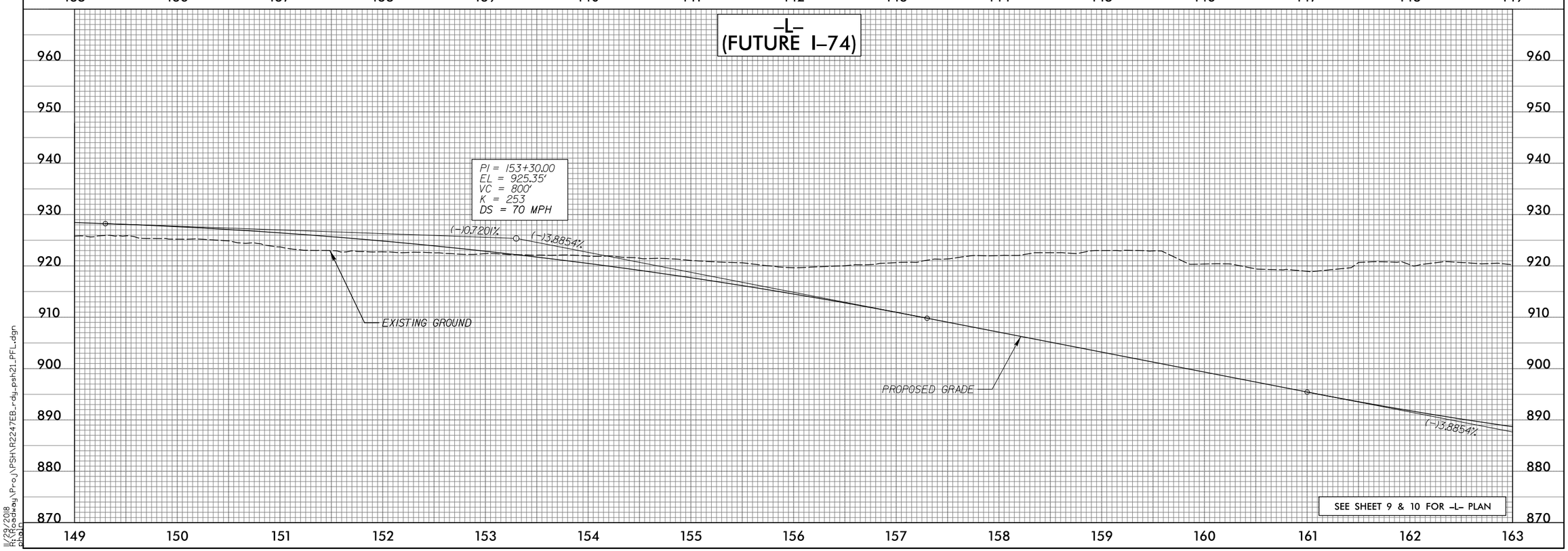

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phale

PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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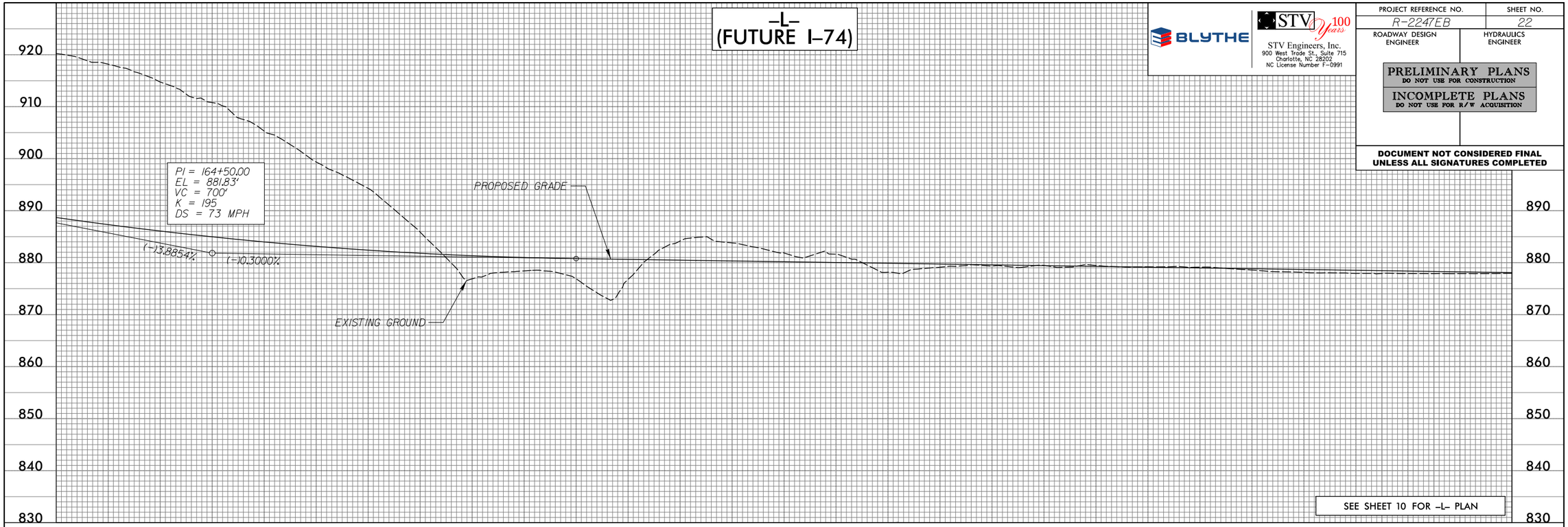
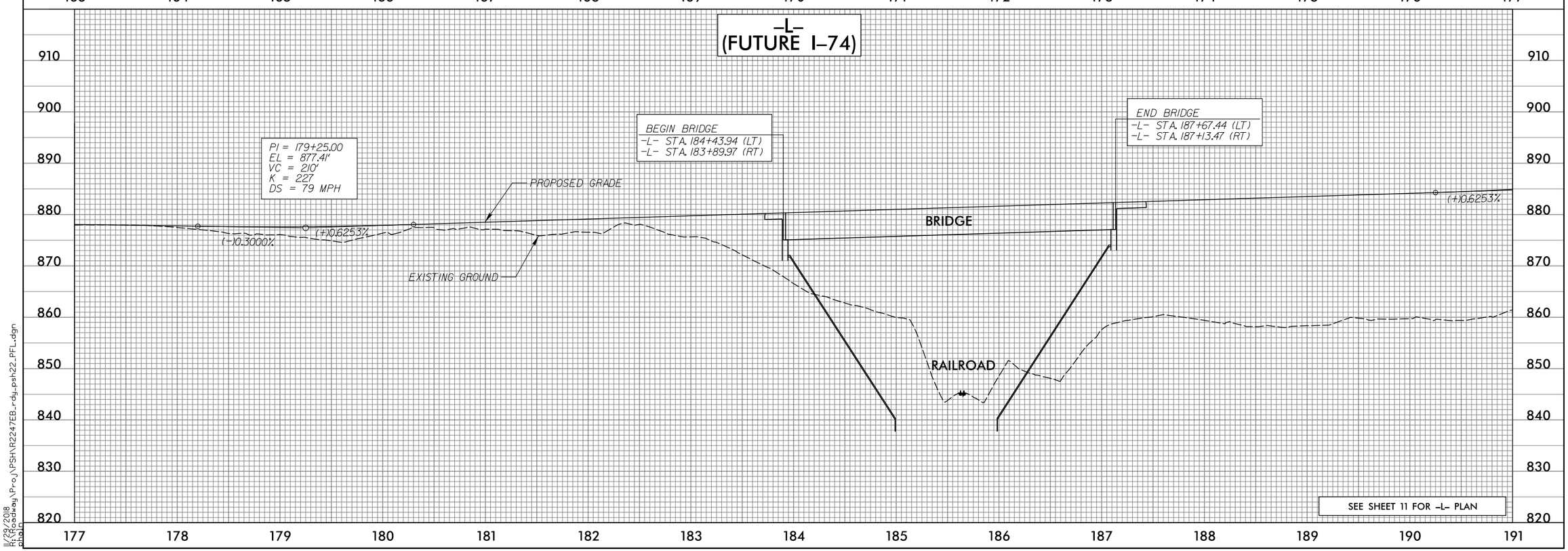


SEE SHEET 10 FOR -L- PLAN



SEE SHEET 11 FOR -L- PLAN

11/22/2018
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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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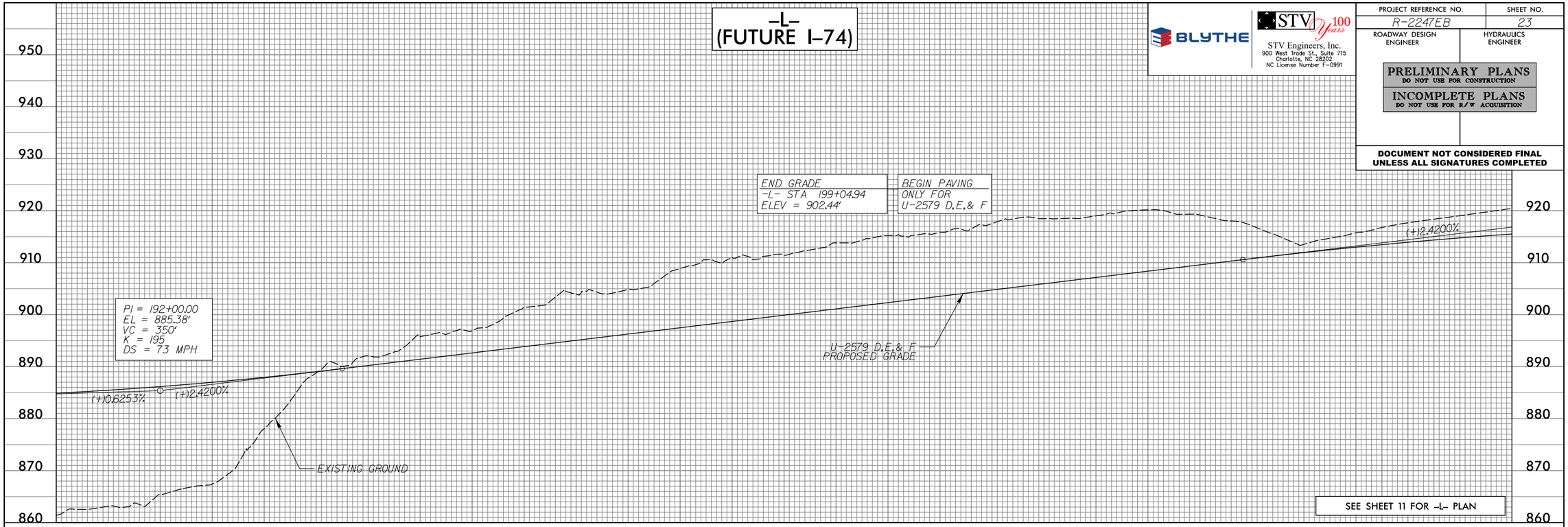

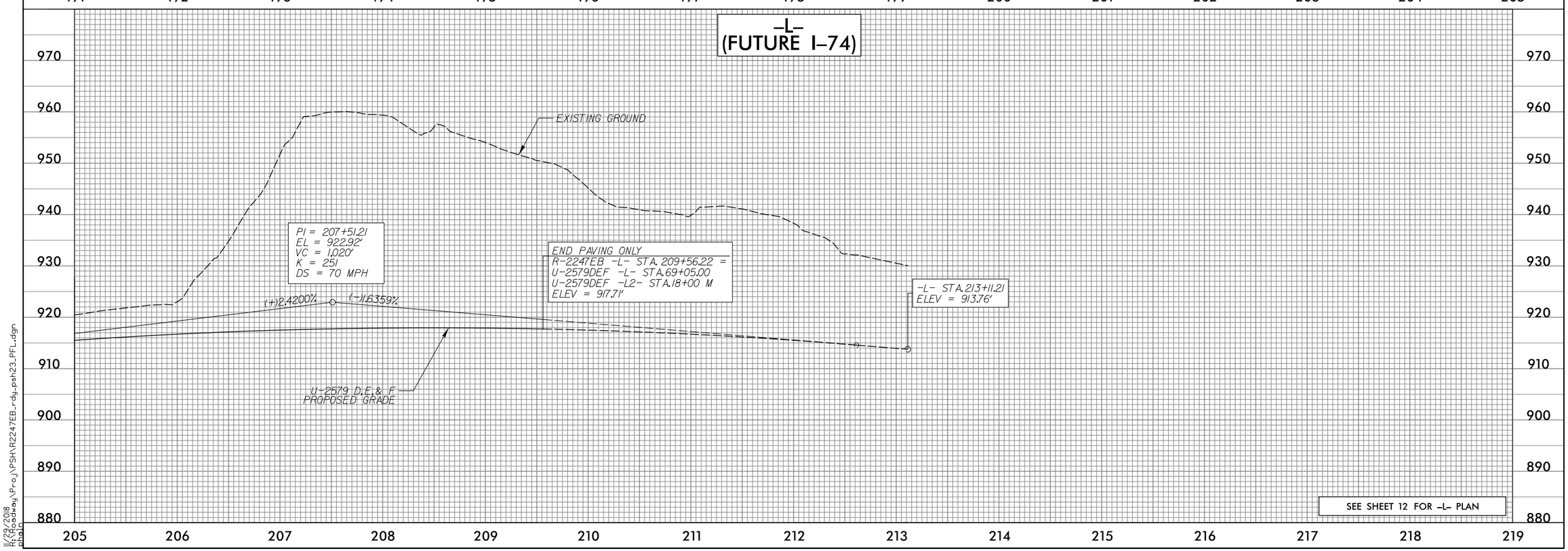

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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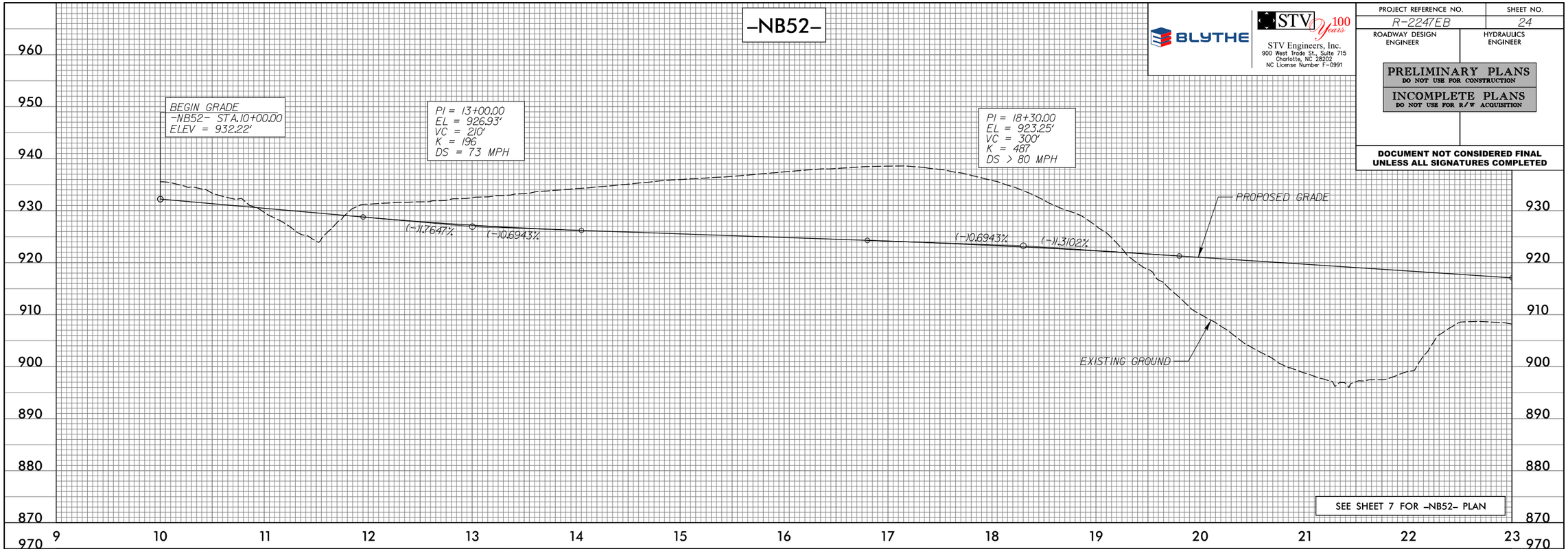

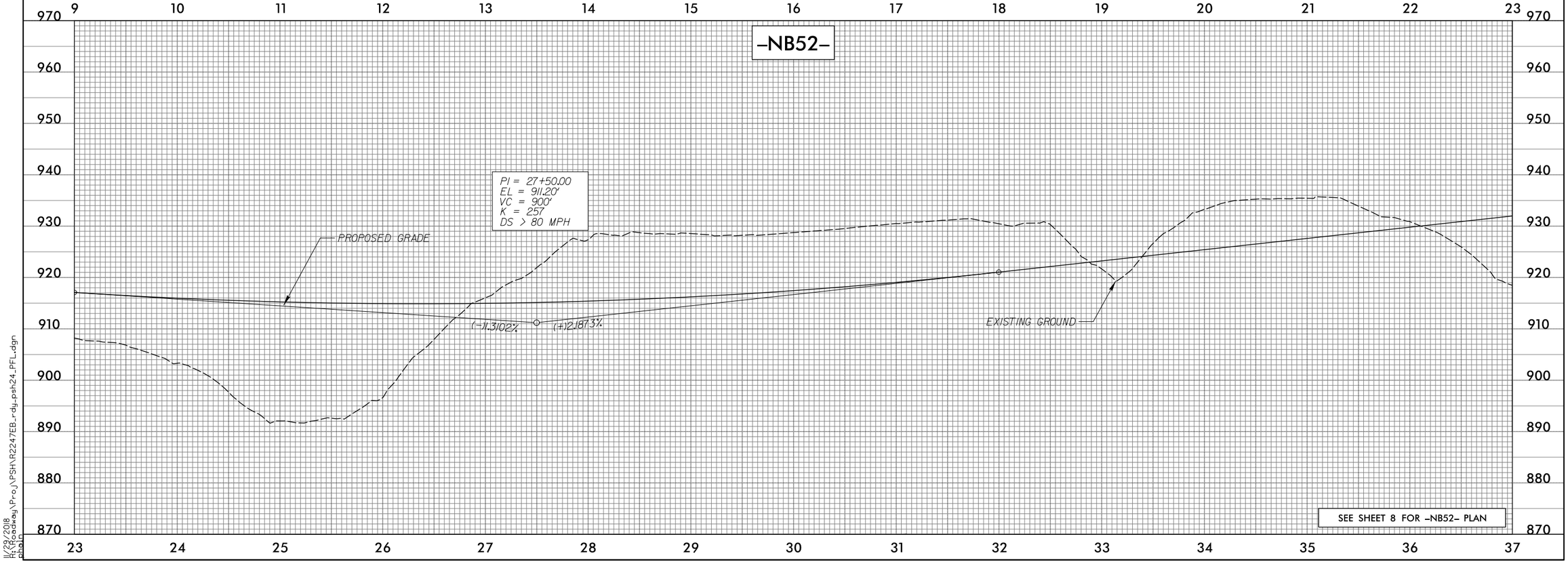

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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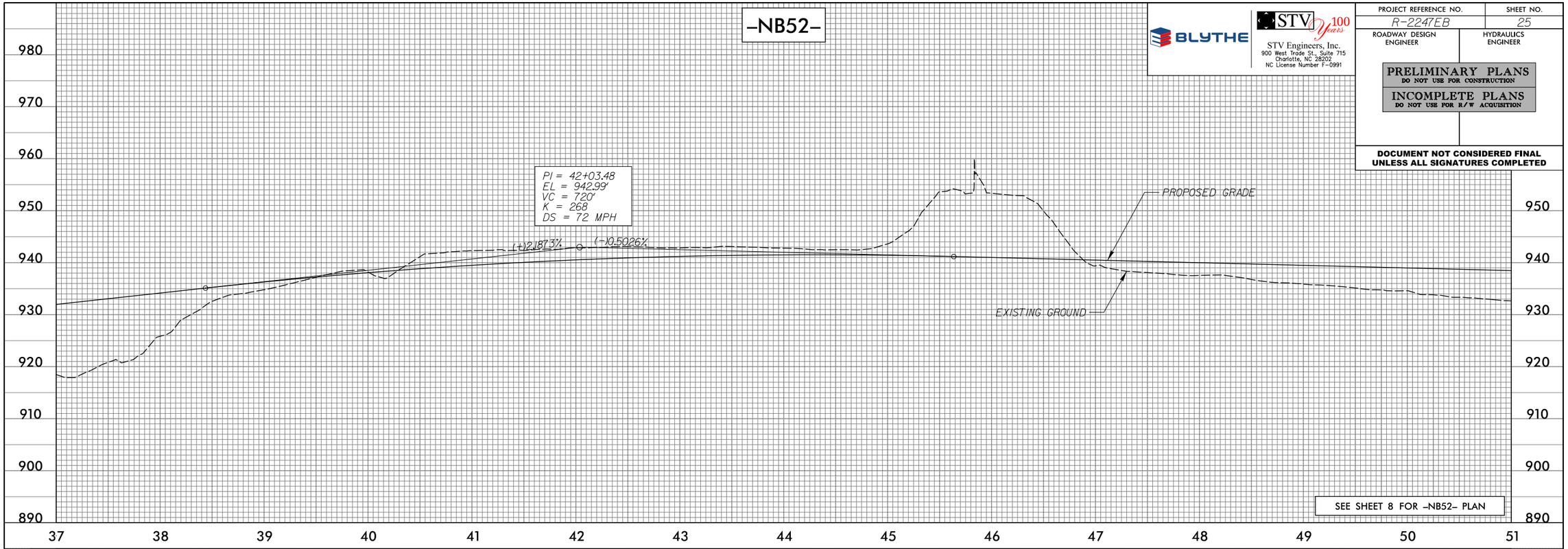

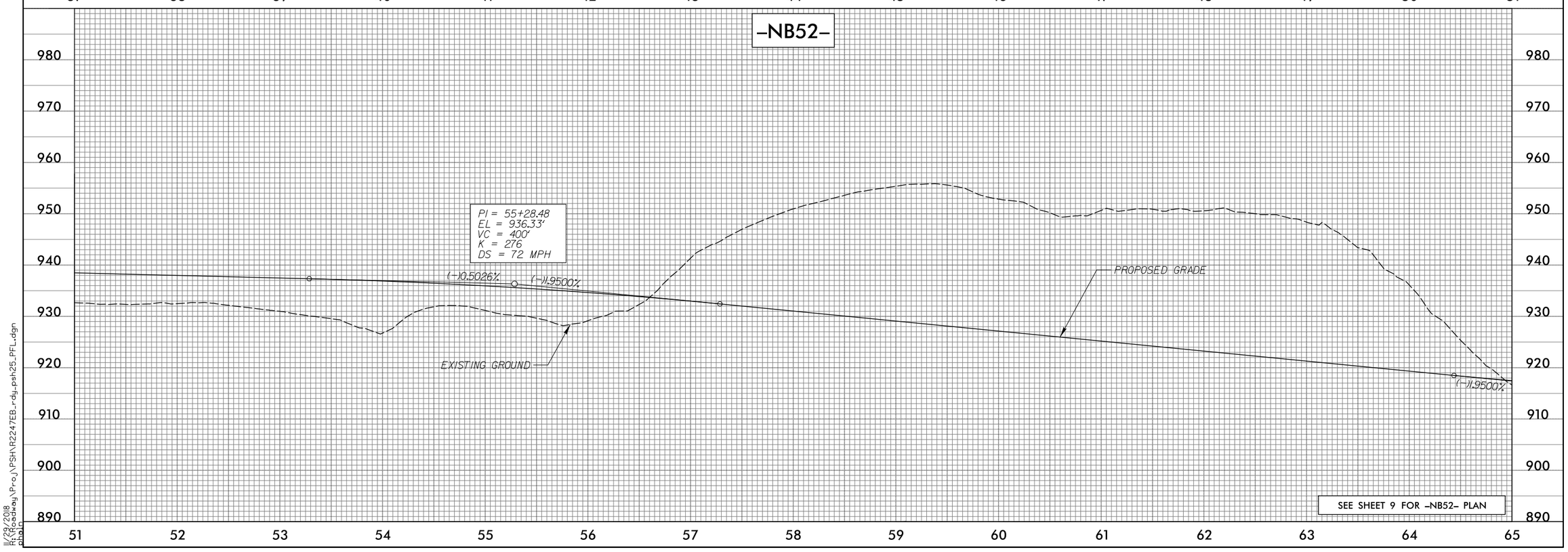

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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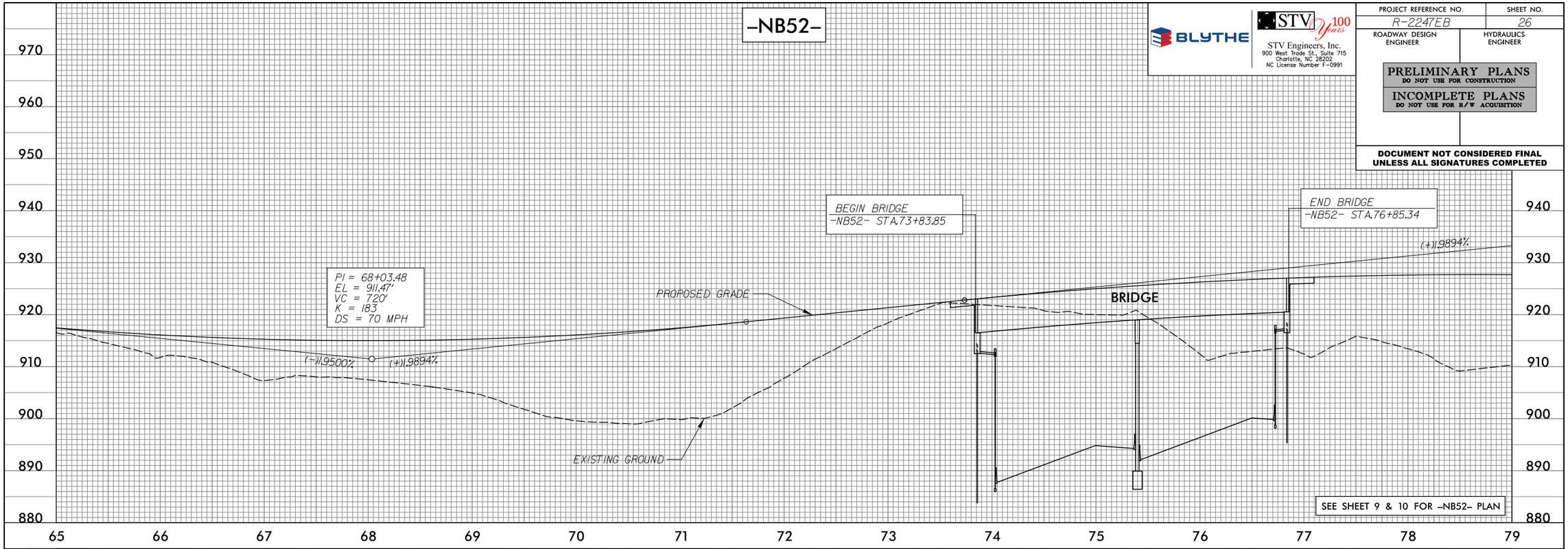

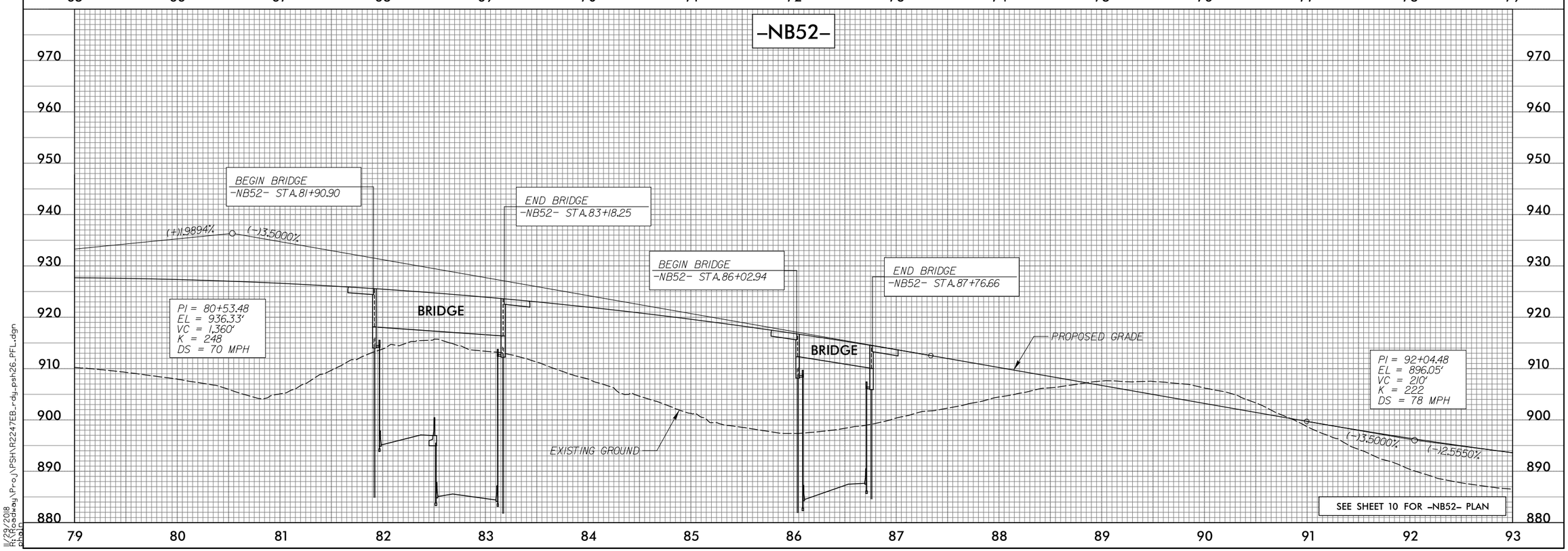

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	27
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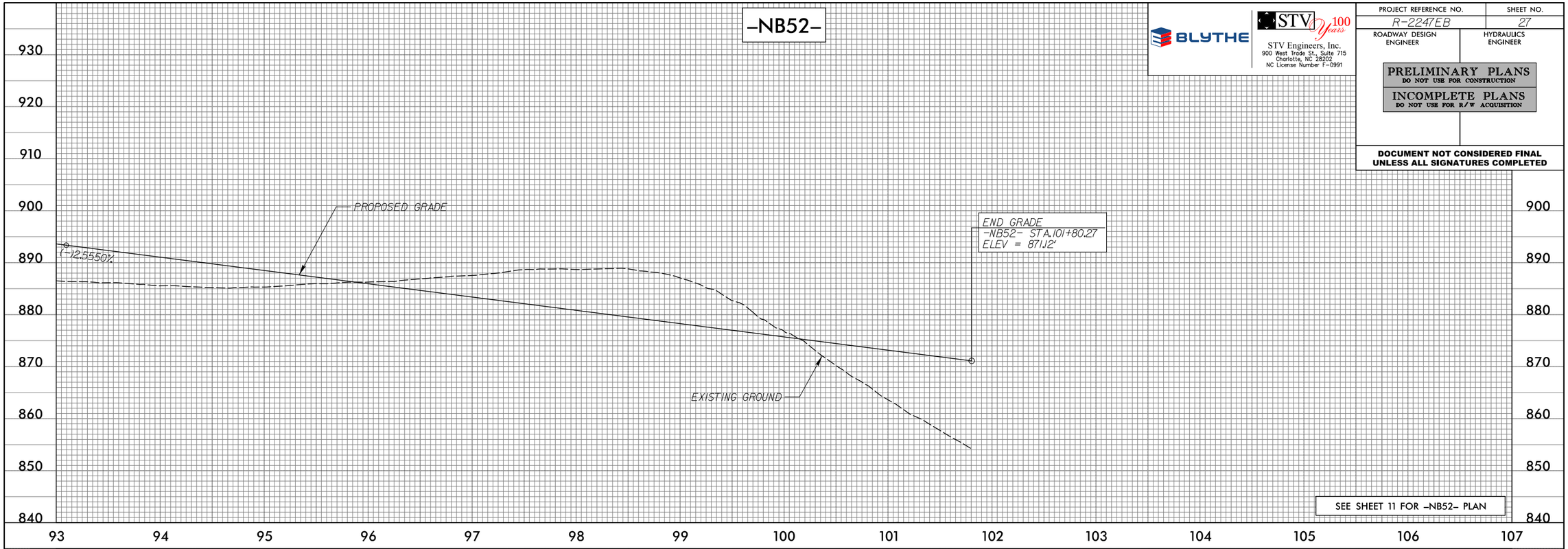

SEE SHEET 11 FOR -NB52- PLAN

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	28
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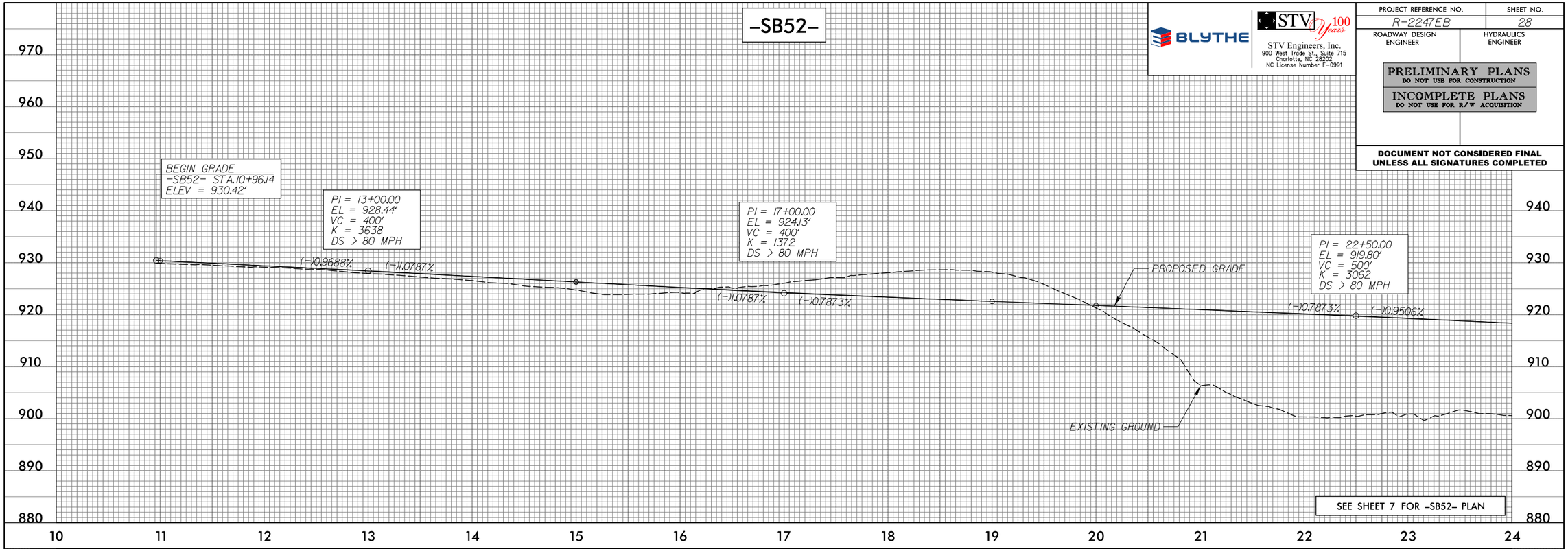

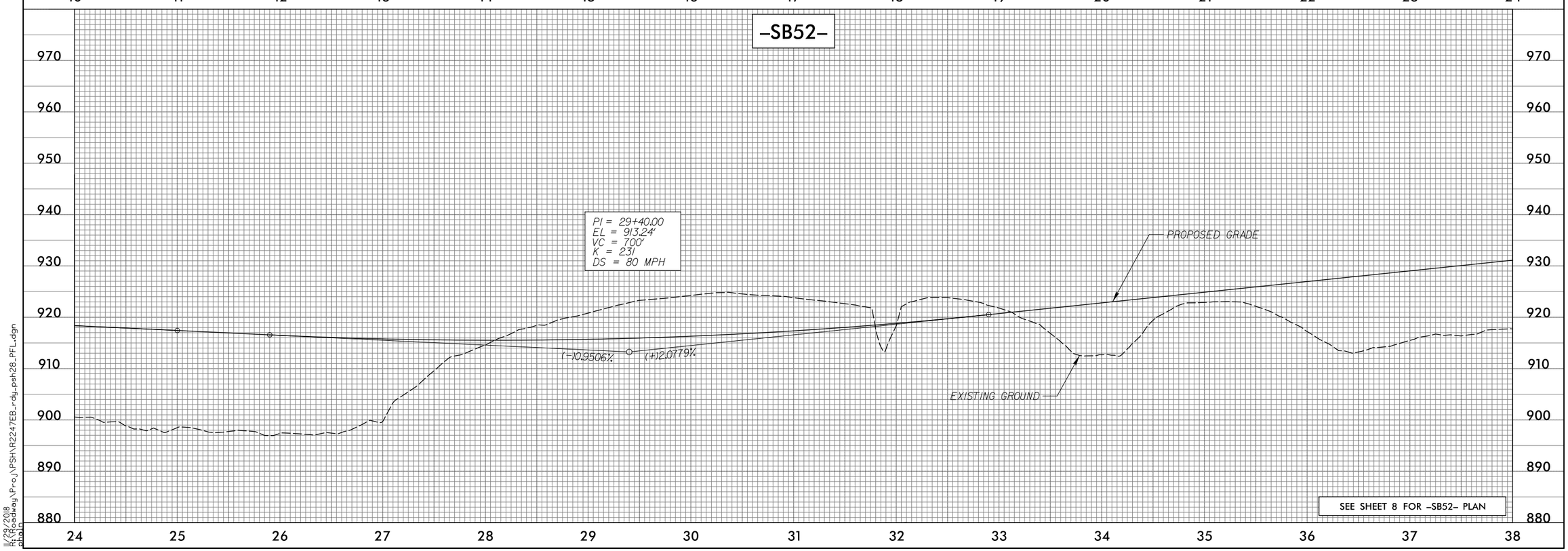

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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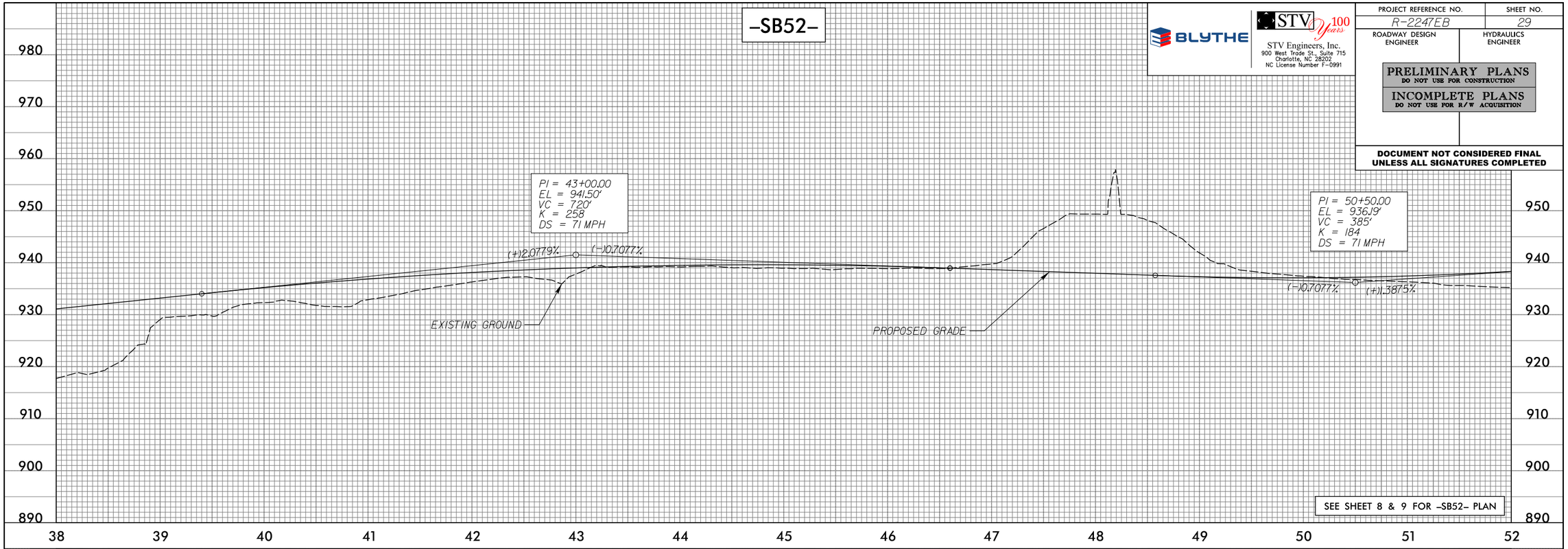

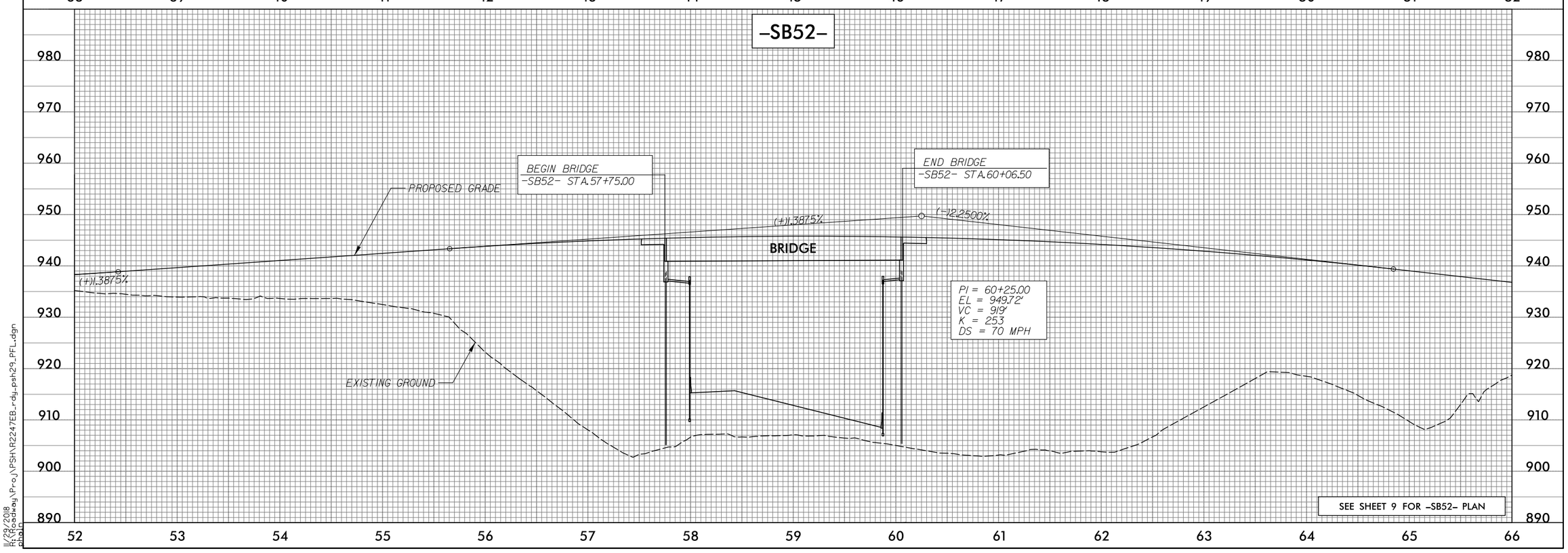

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	30
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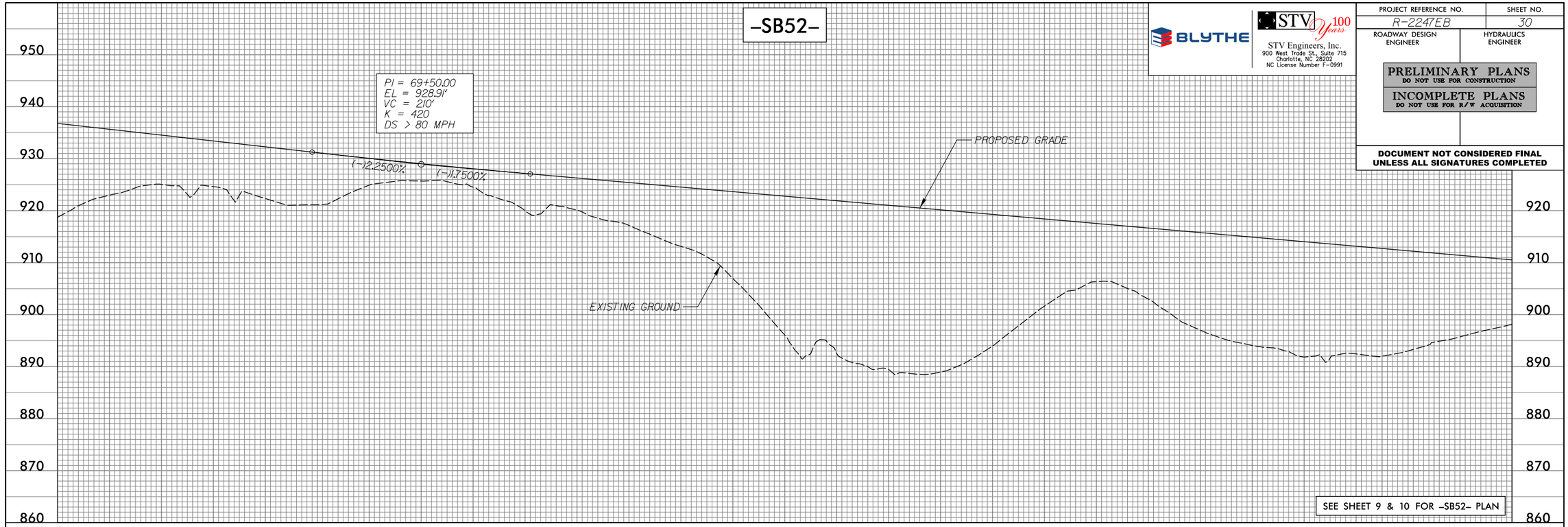
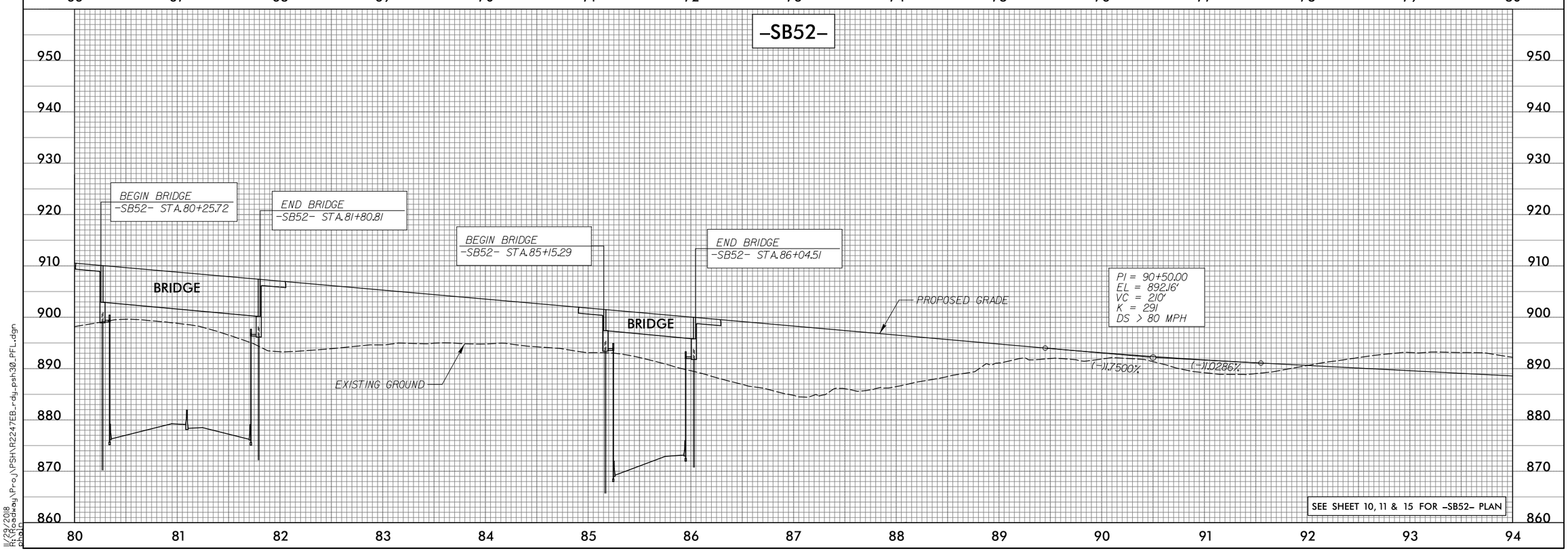


SEE SHEET 9 & 10 FOR -SB52- PLAN



SEE SHEET 10, 11 & 15 FOR -SB52- PLAN

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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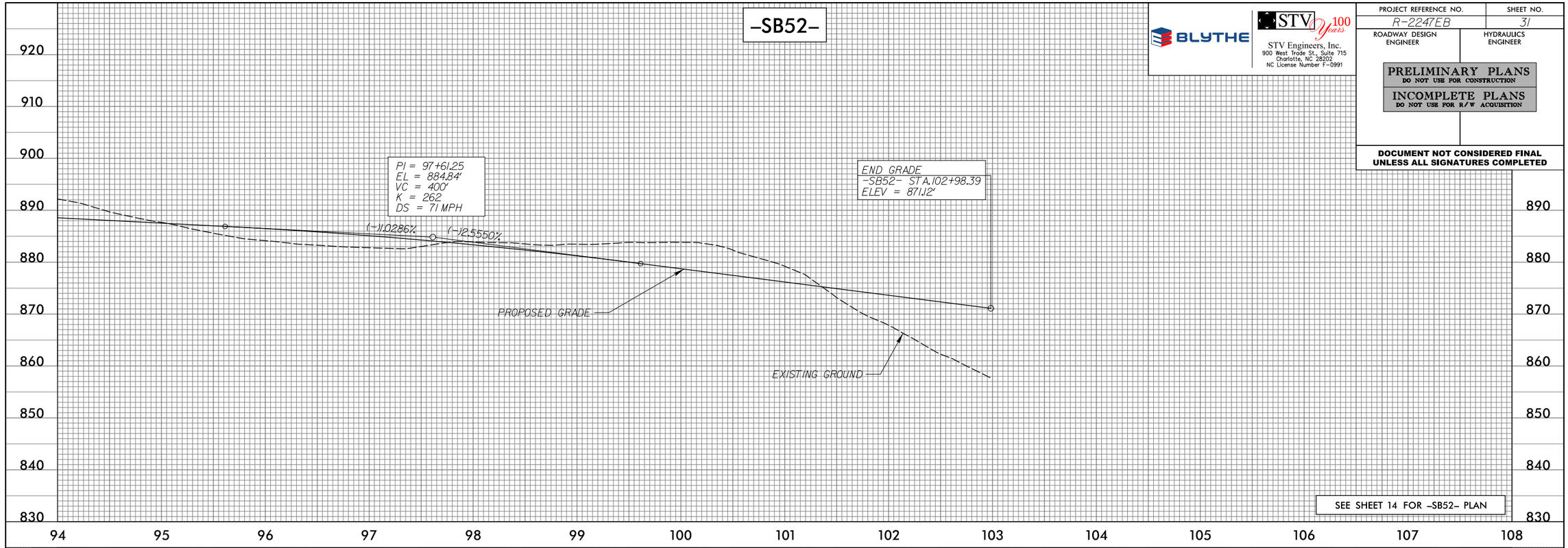

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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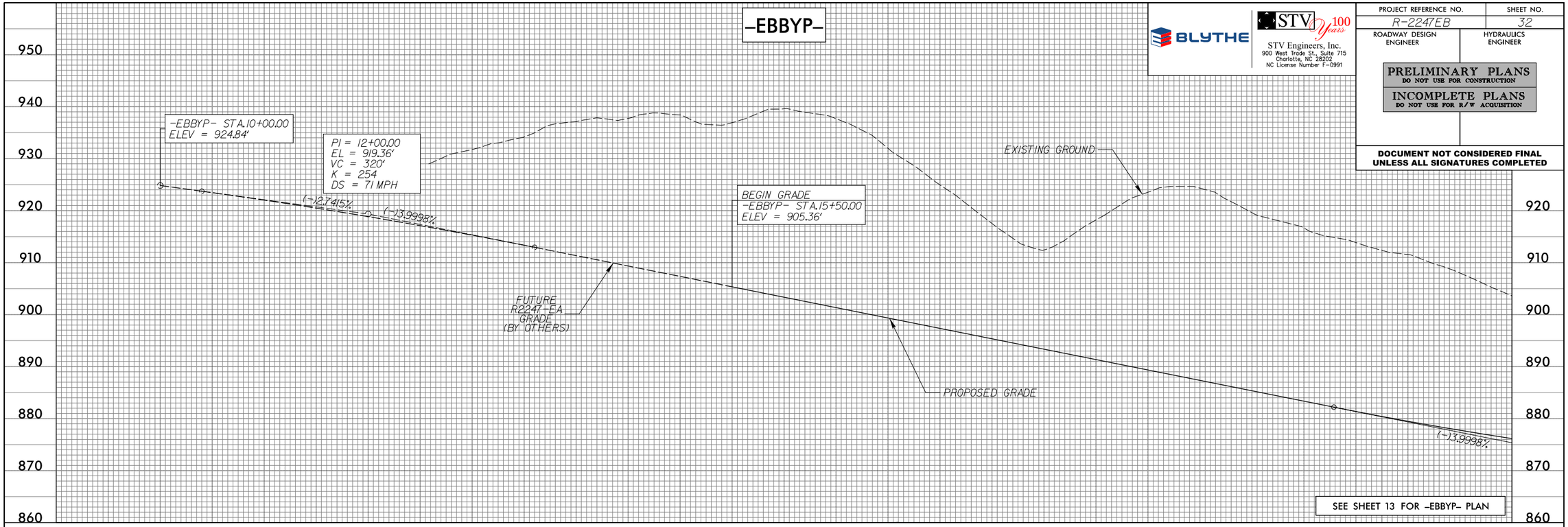

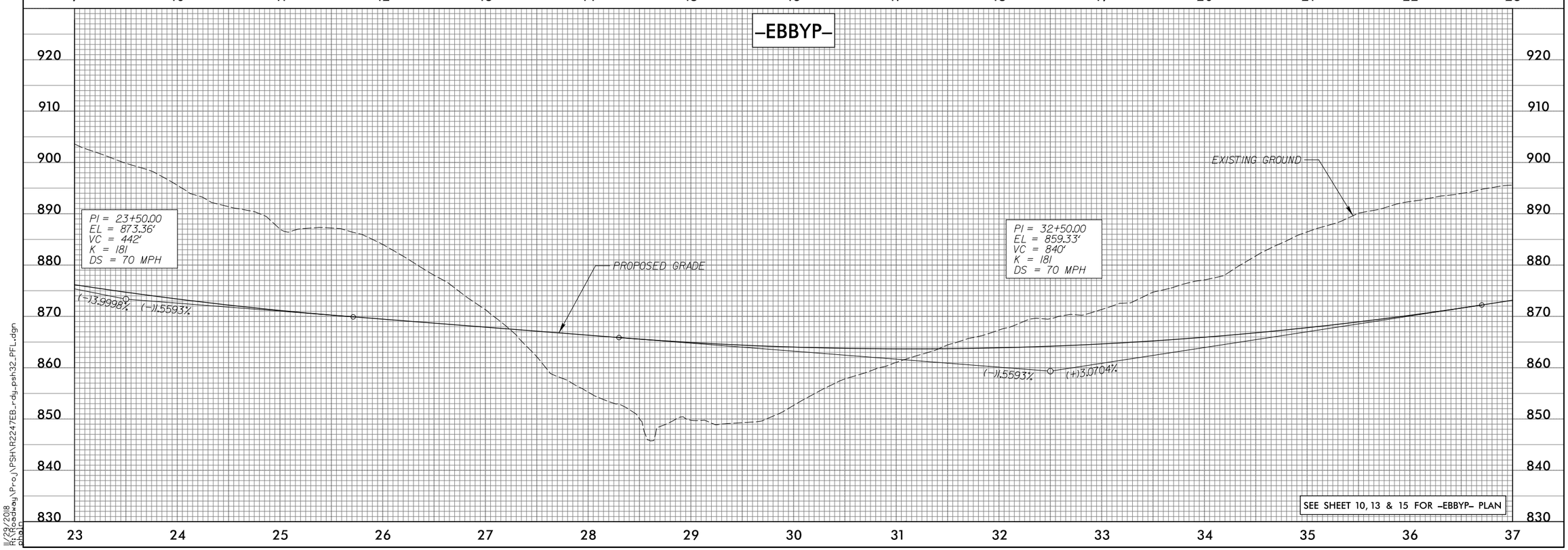

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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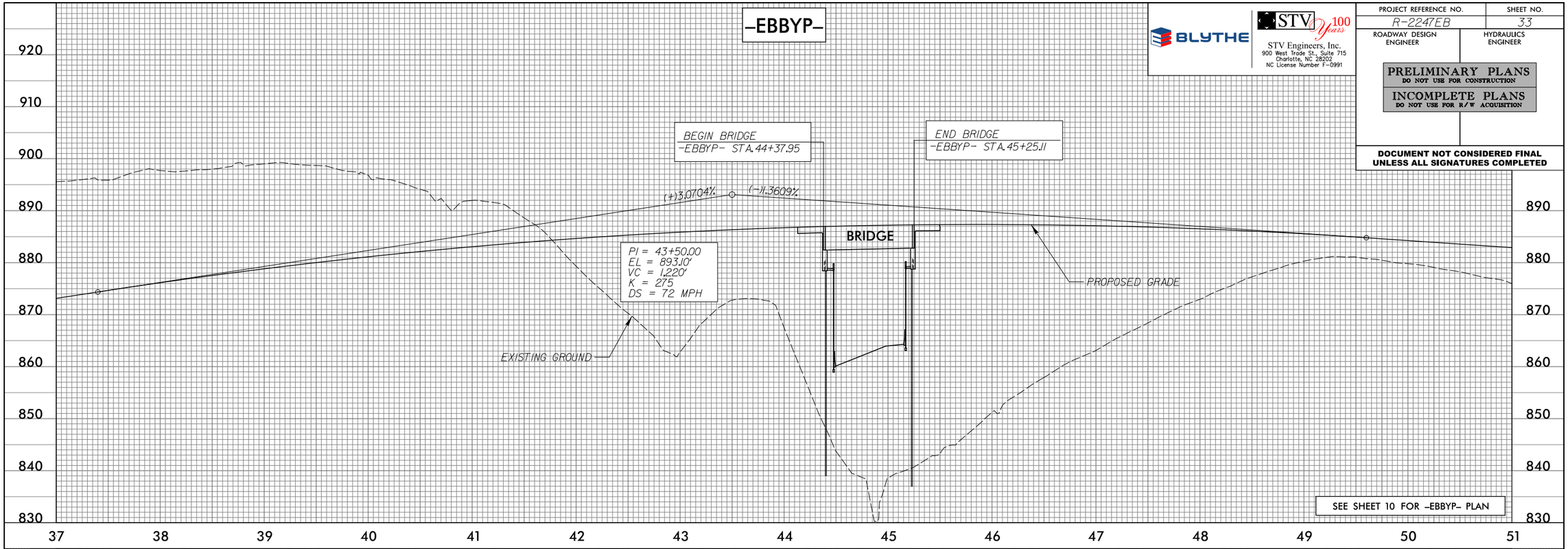

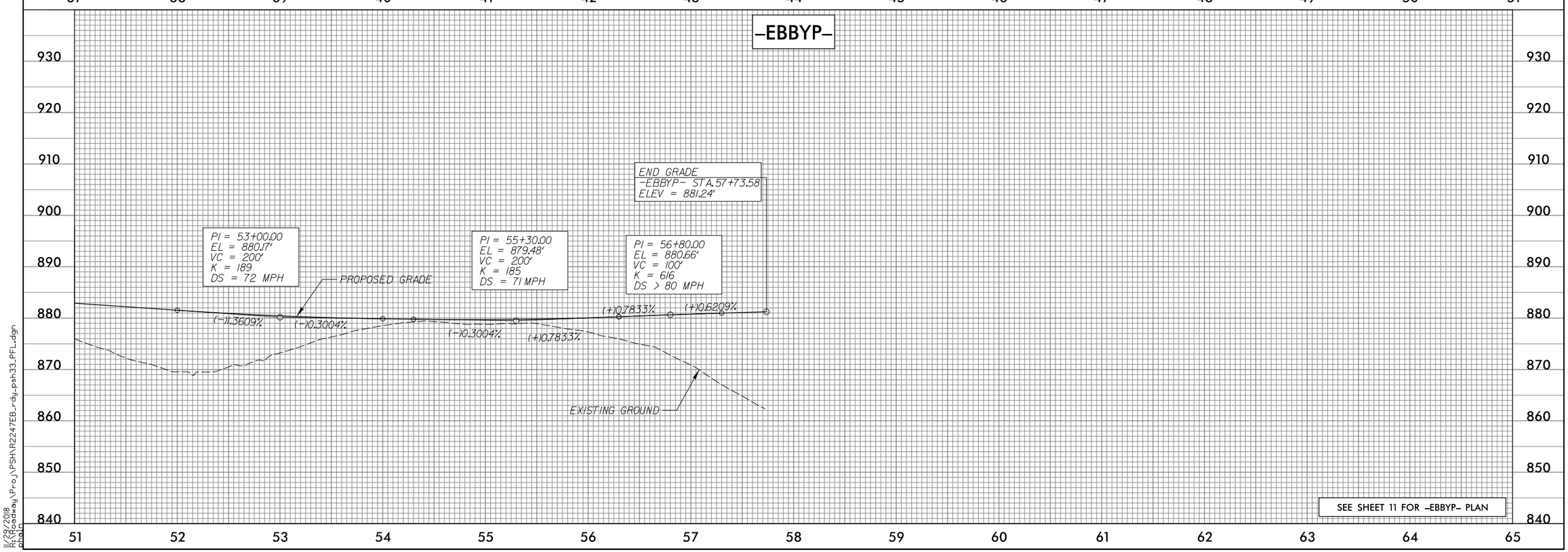

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	34
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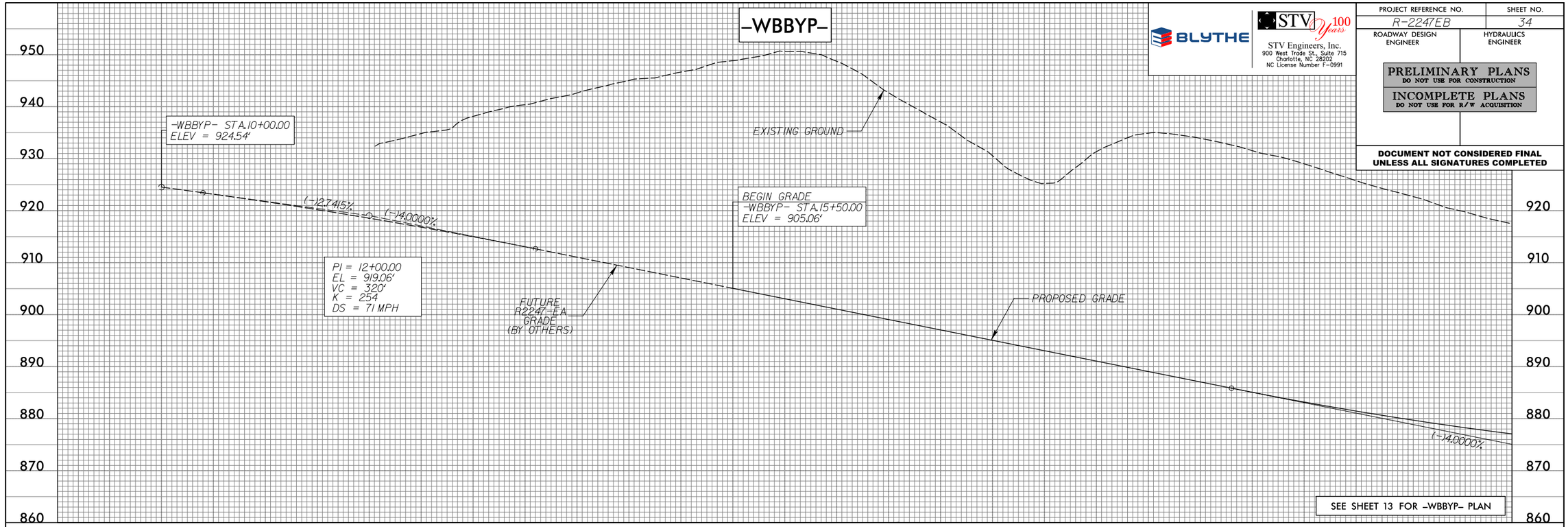

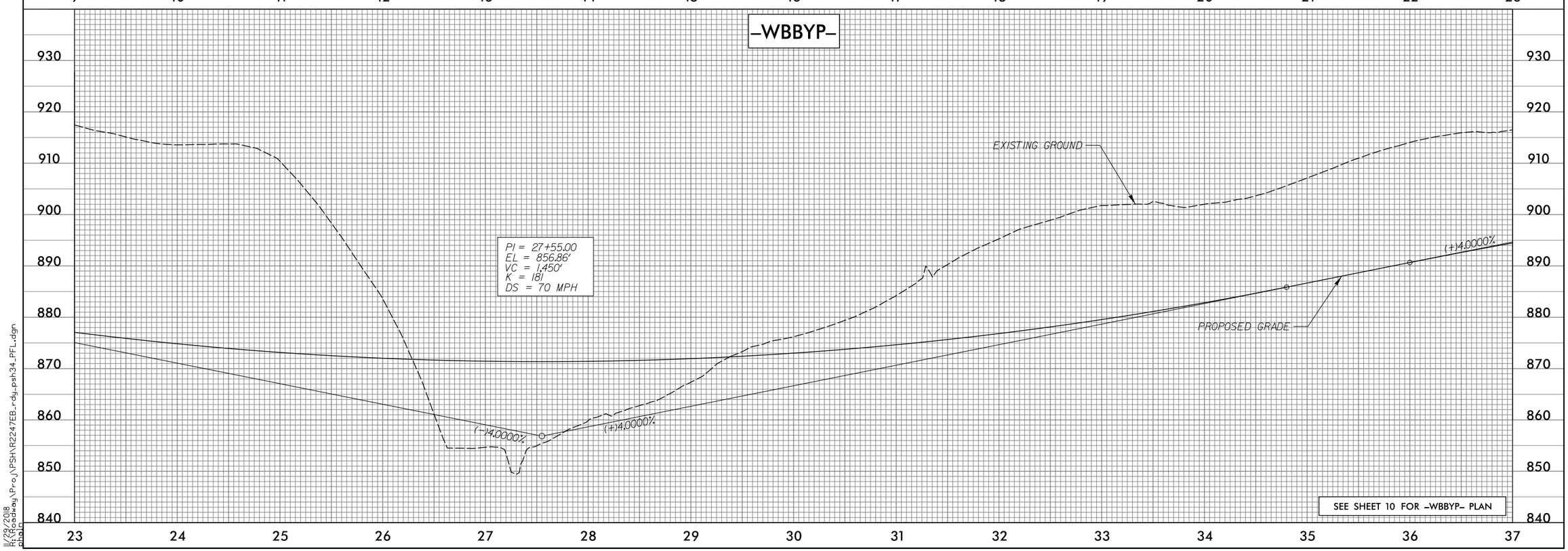

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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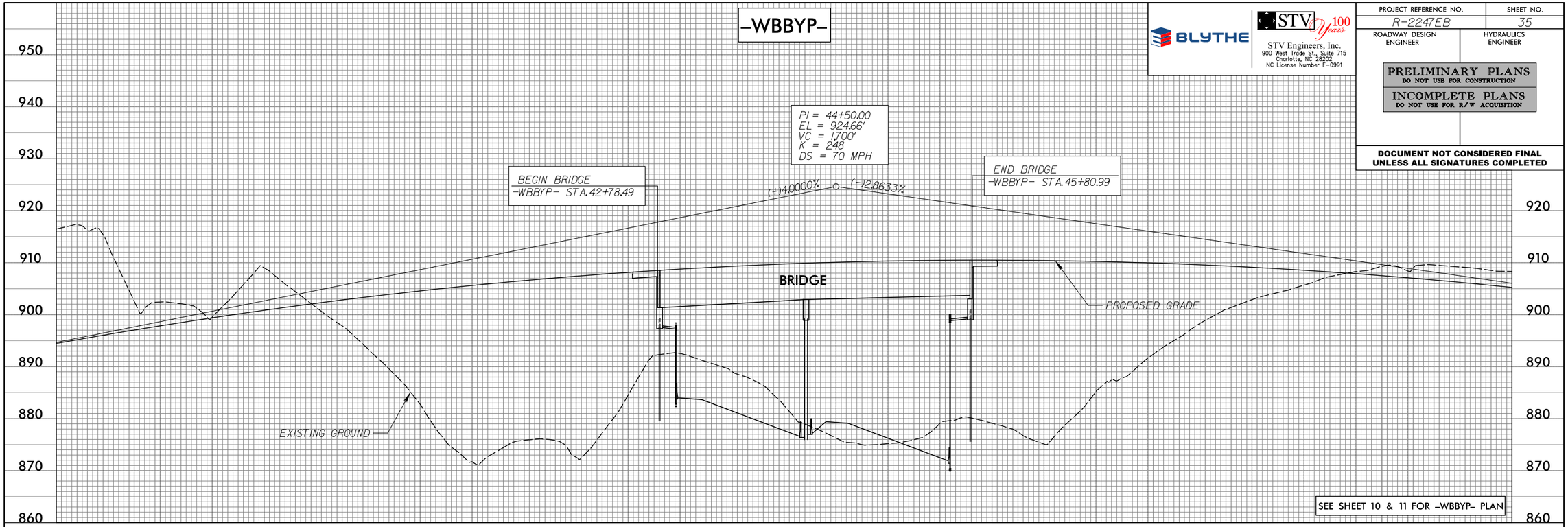

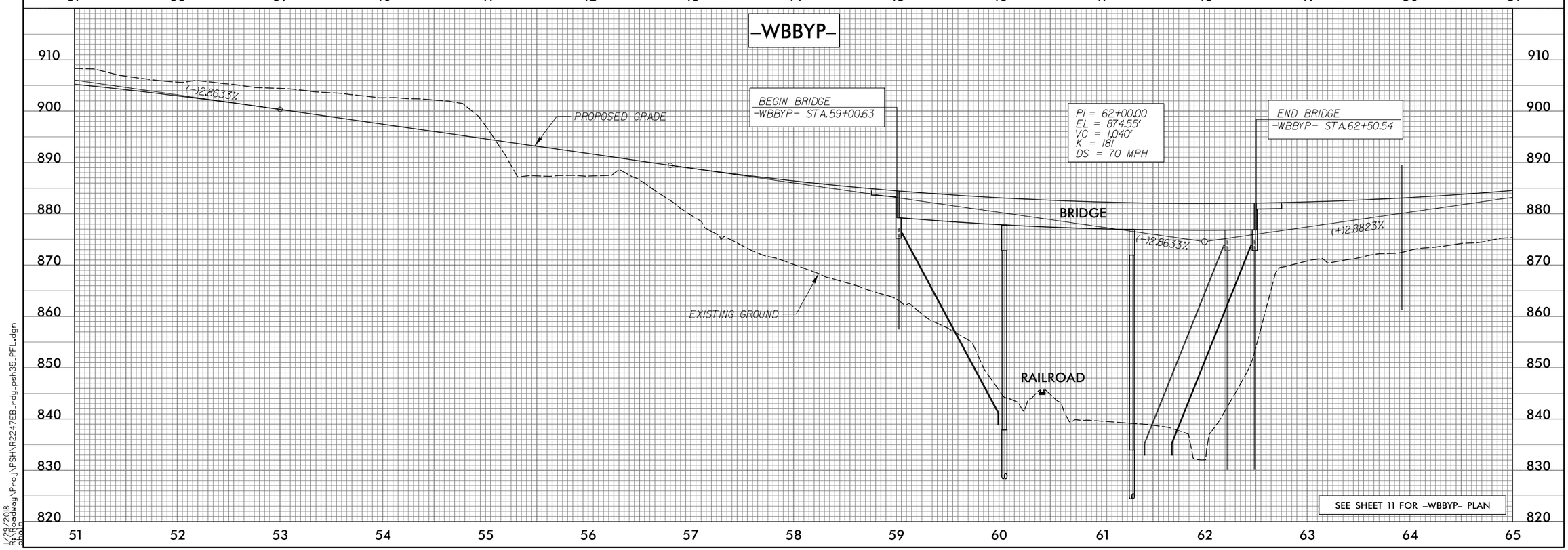

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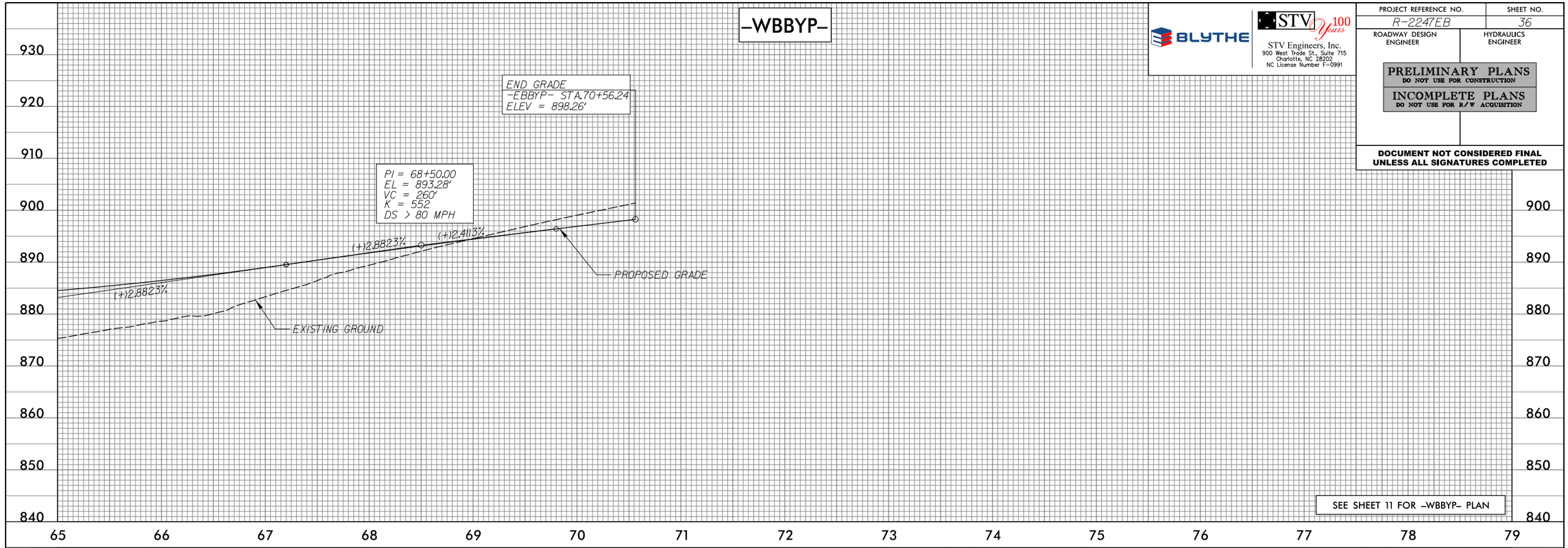

SEE SHEET 11 FOR -WBBYP- PLAN

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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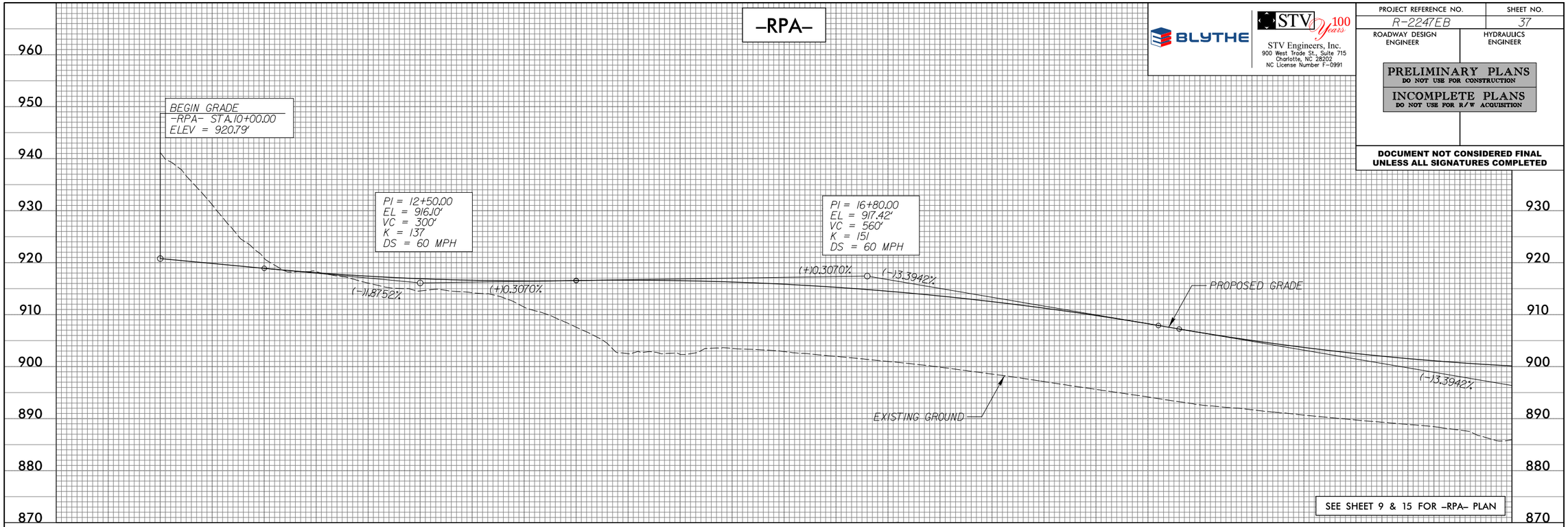

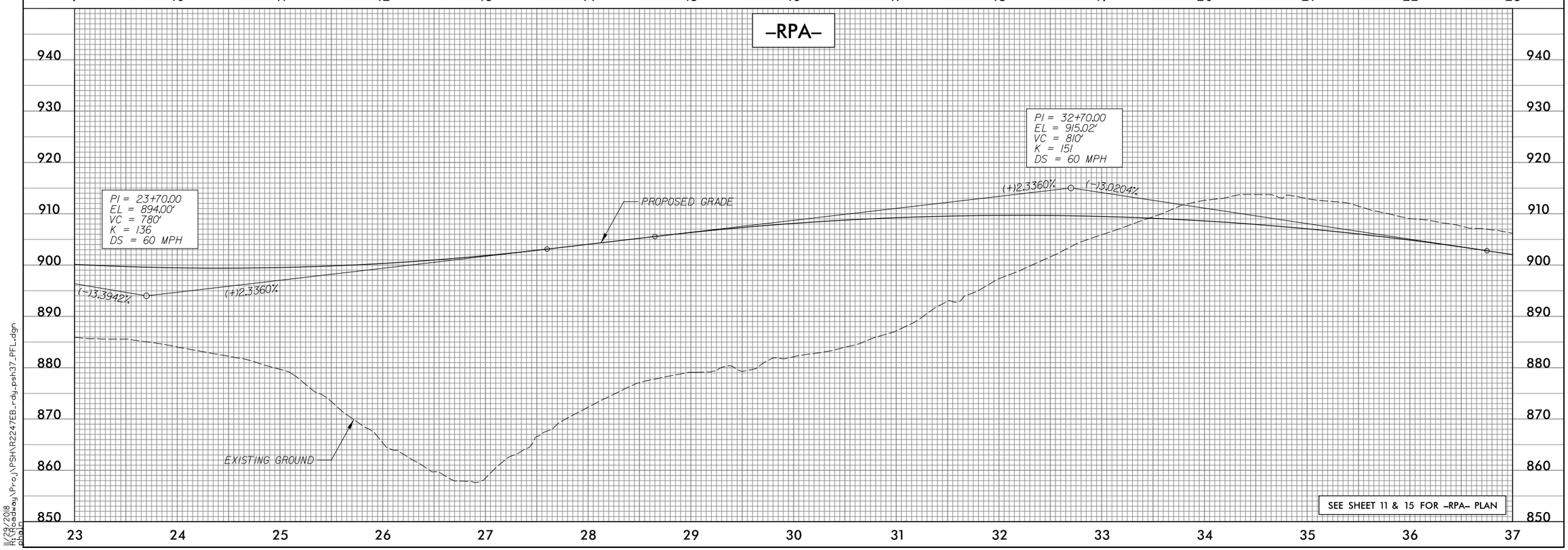

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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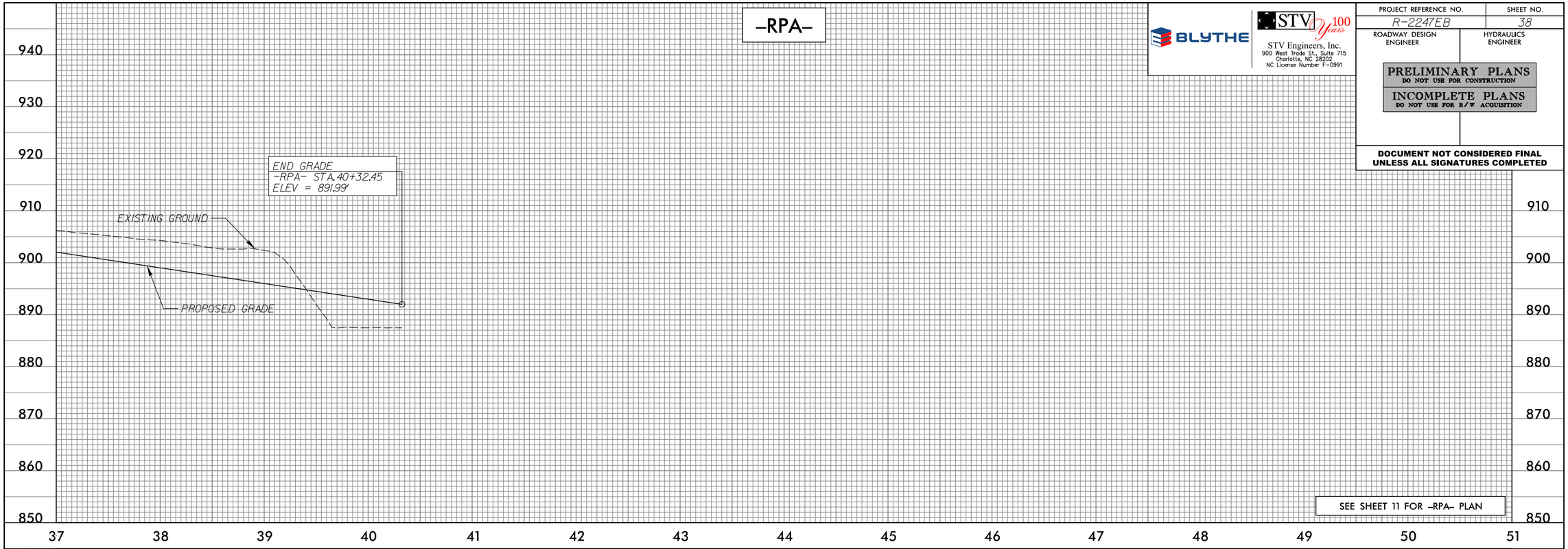
-RPA-



SEE SHEET 11 FOR -RPA- PLAN

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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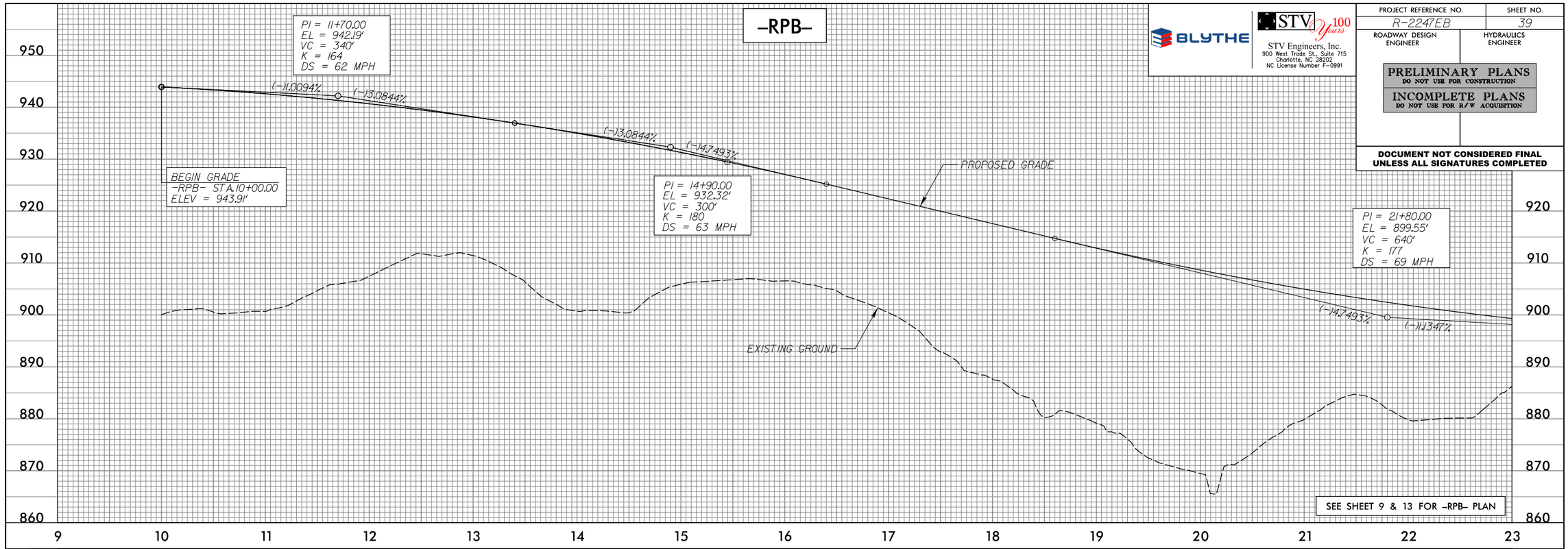

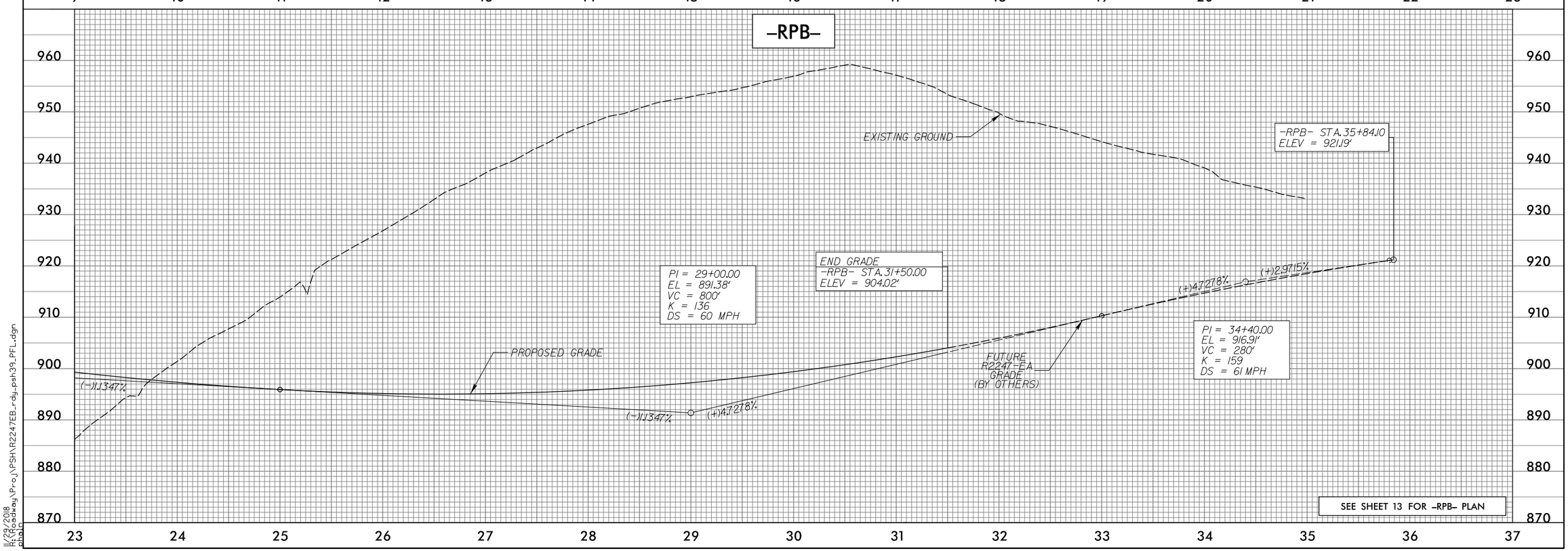

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	40
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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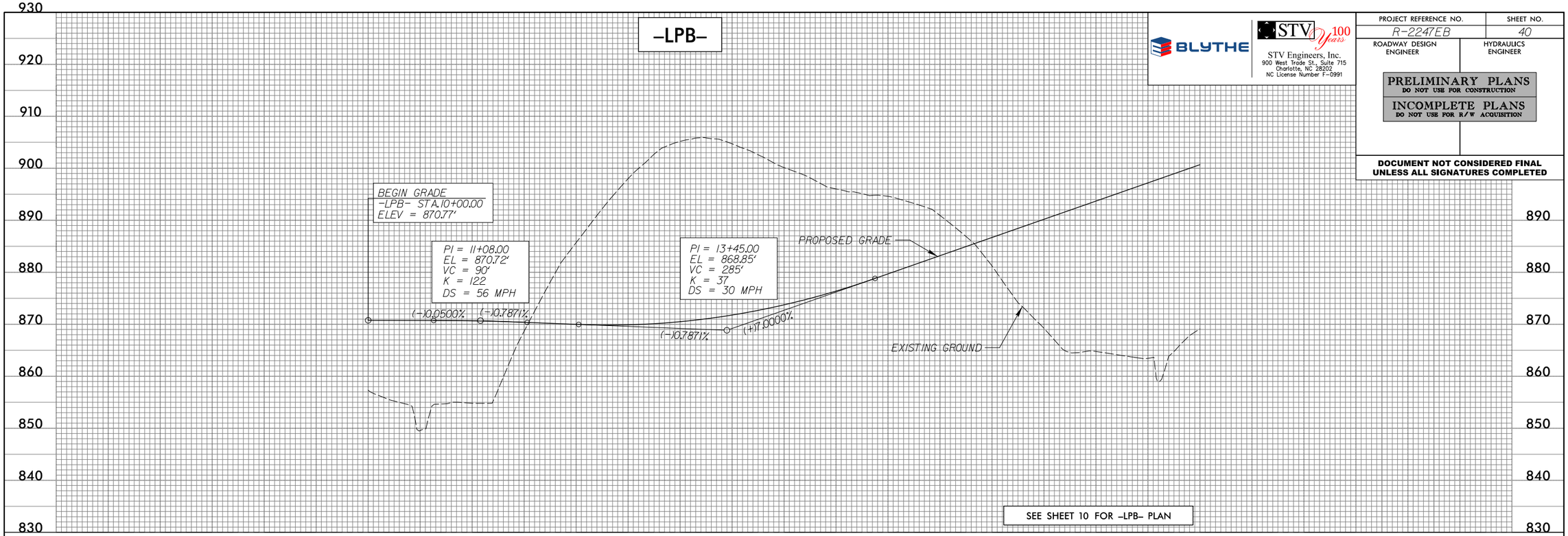

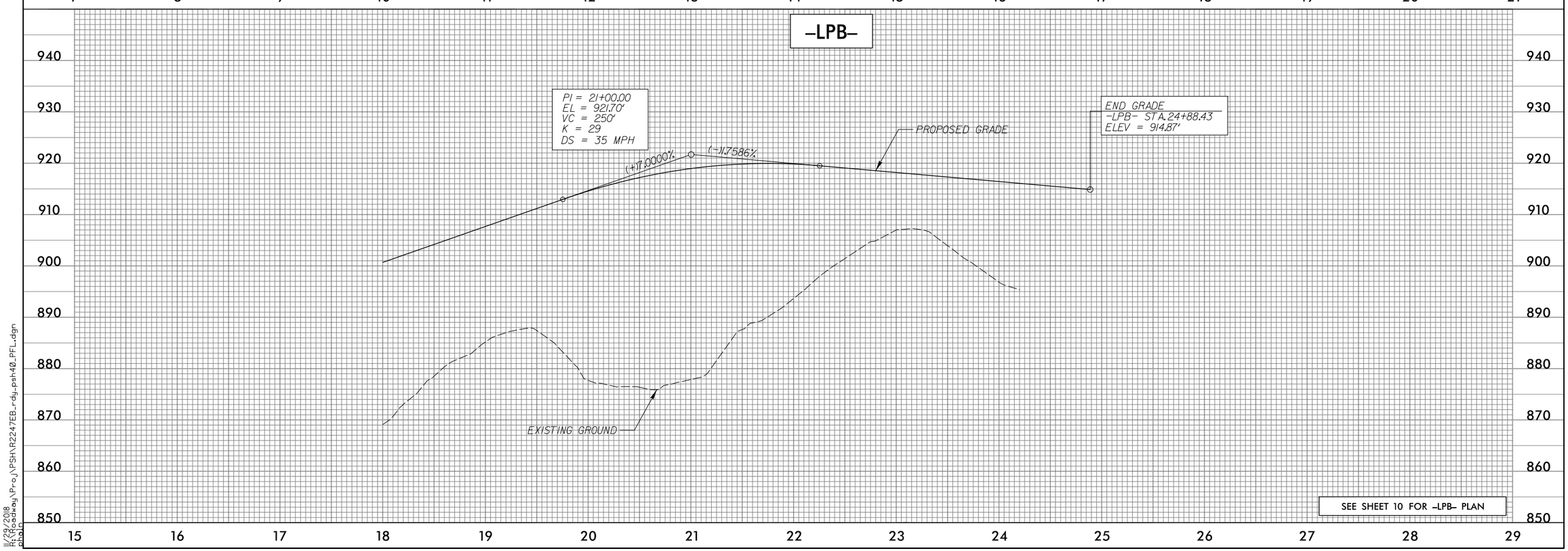

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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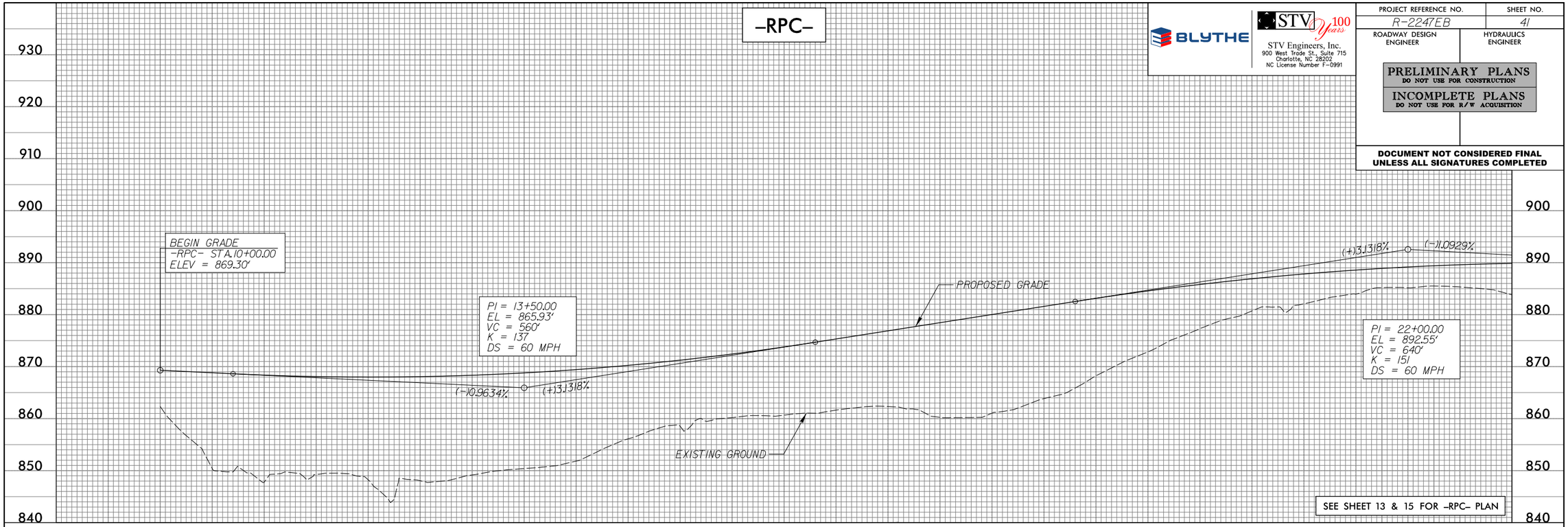
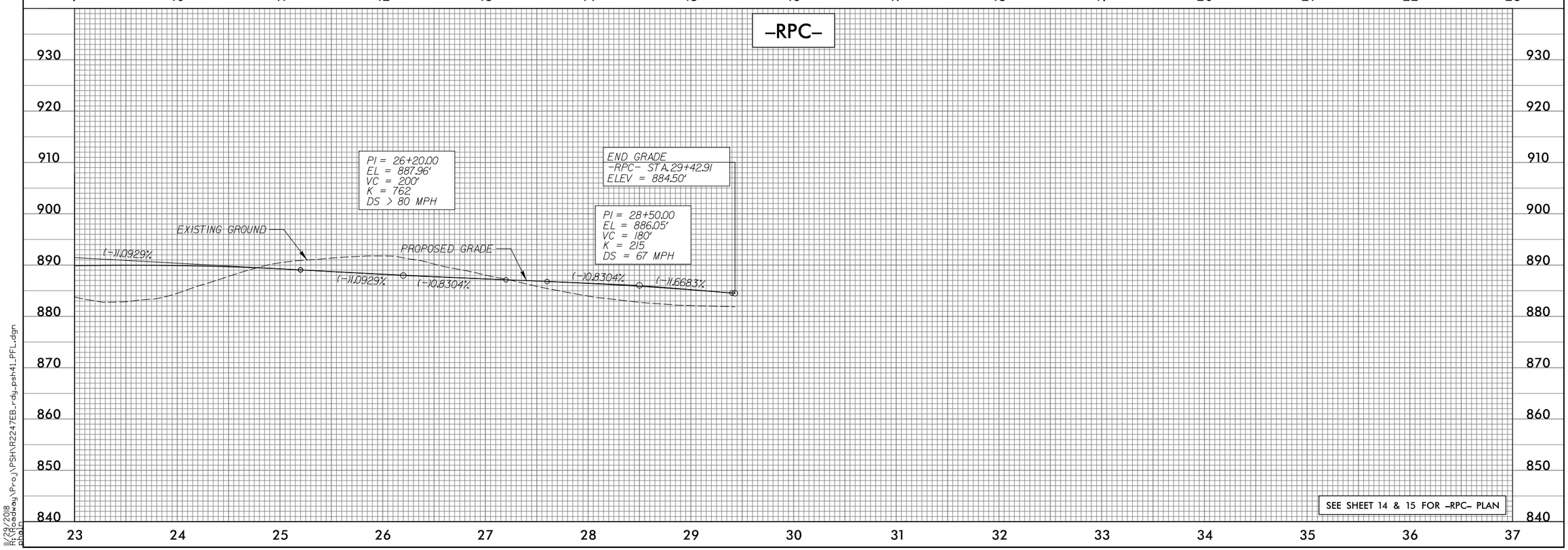


SEE SHEET 13 & 15 FOR -RPC- PLAN



SEE SHEET 14 & 15 FOR -RPC- PLAN

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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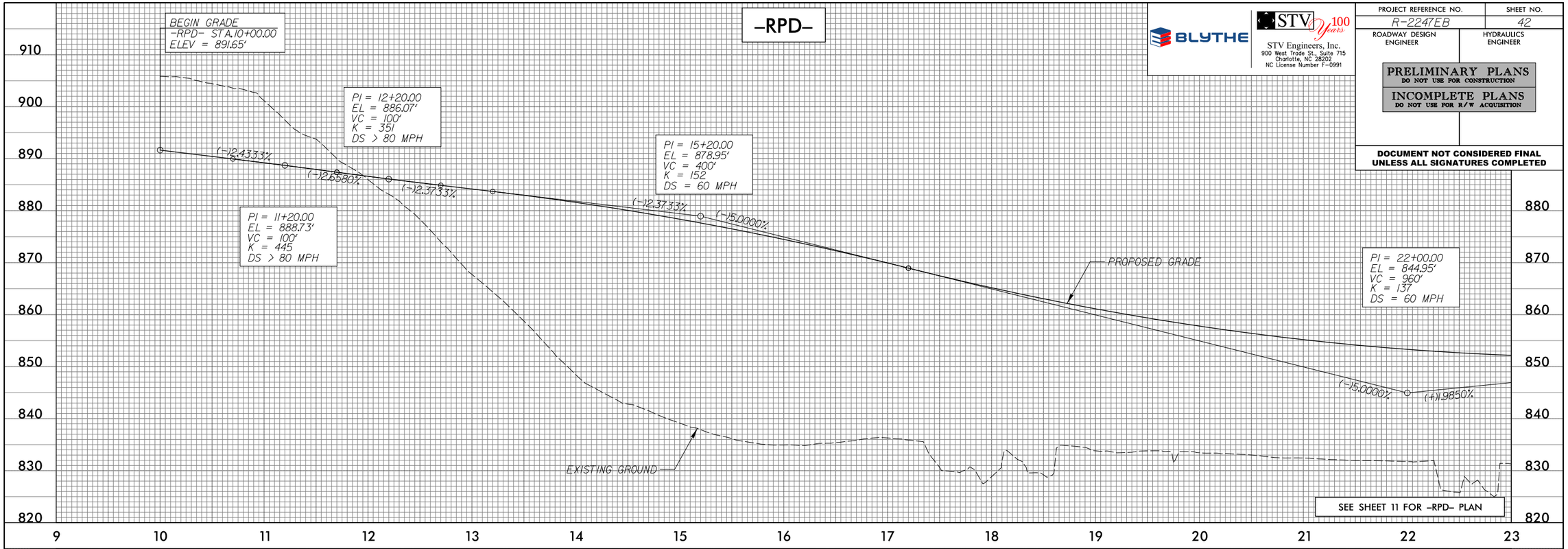

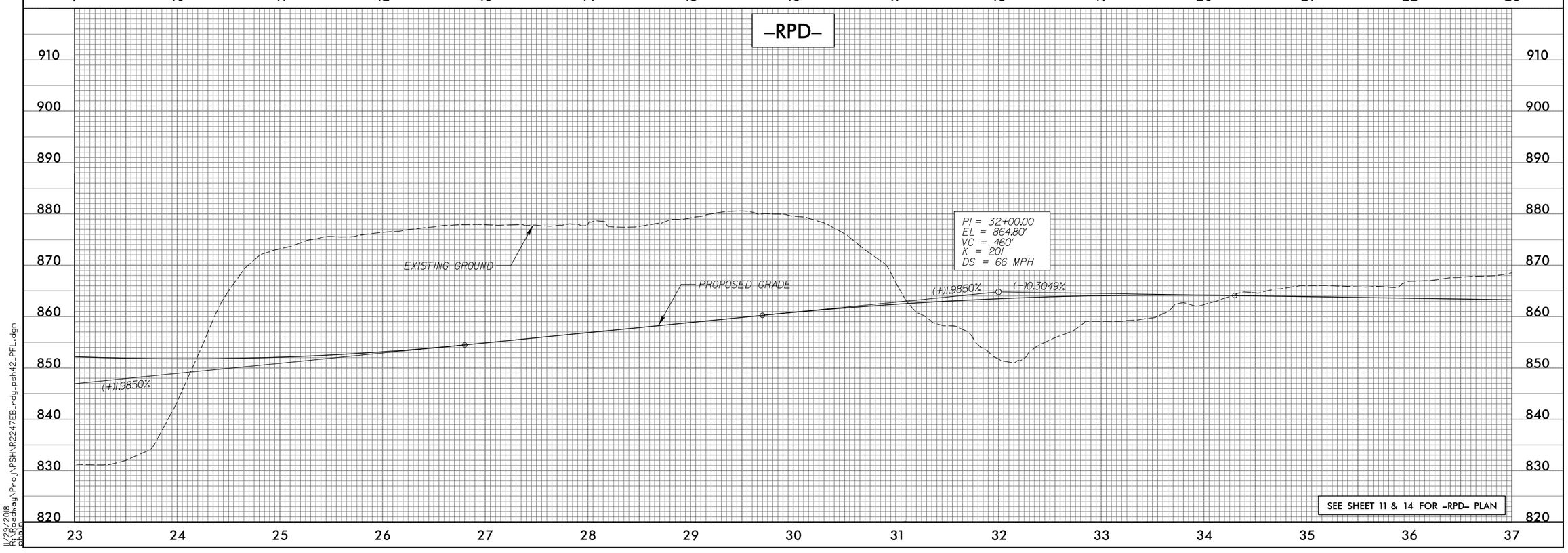

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	43
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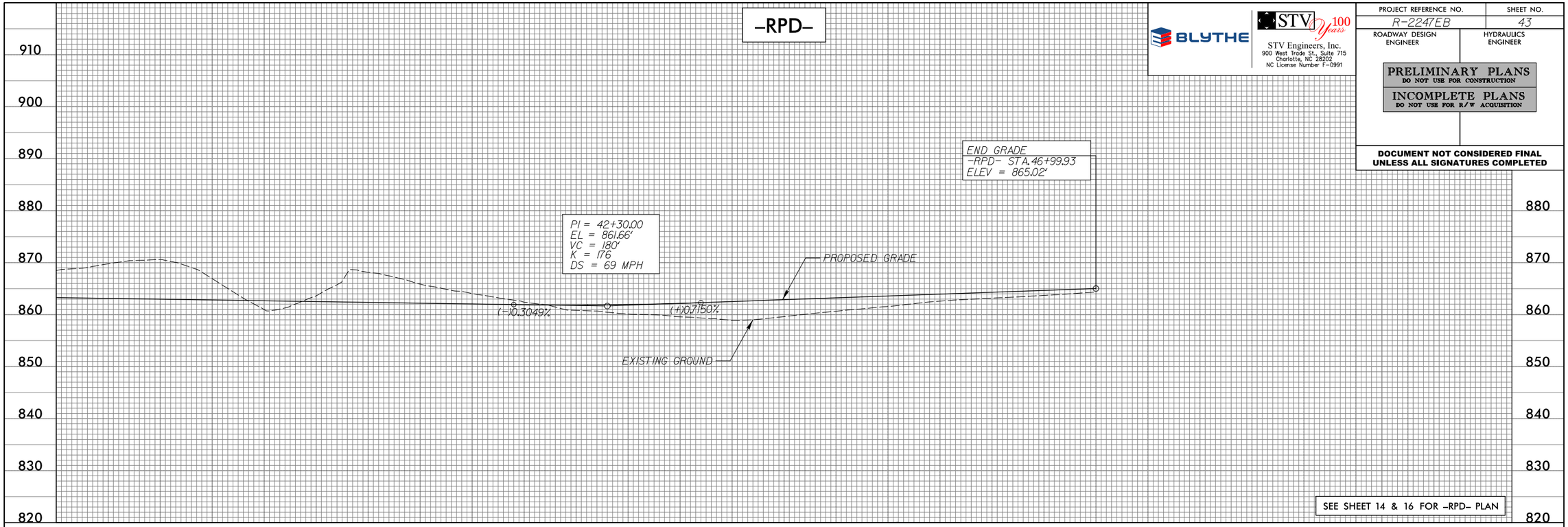

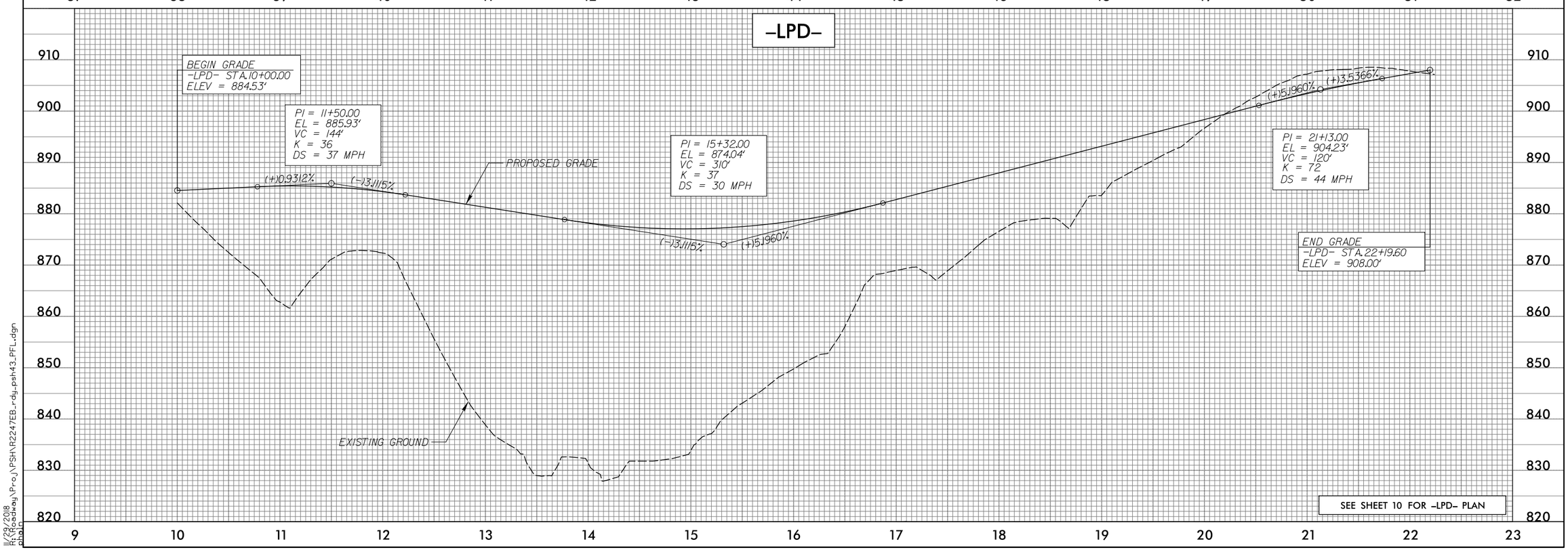

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	44
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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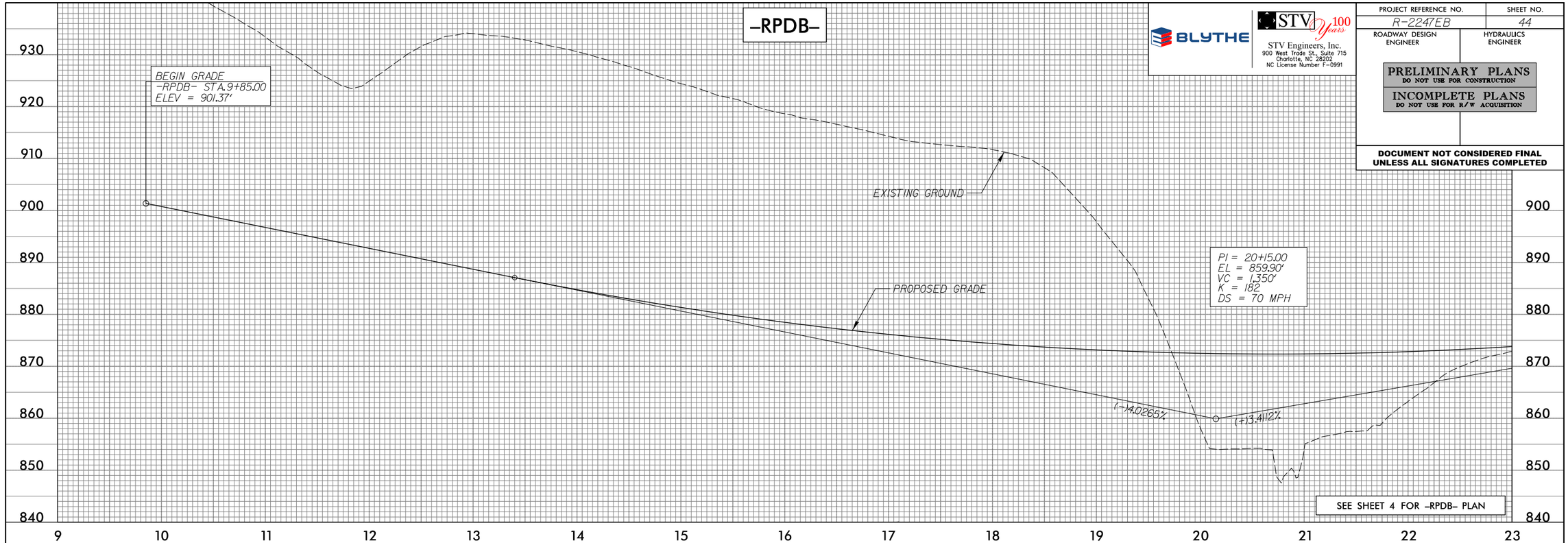

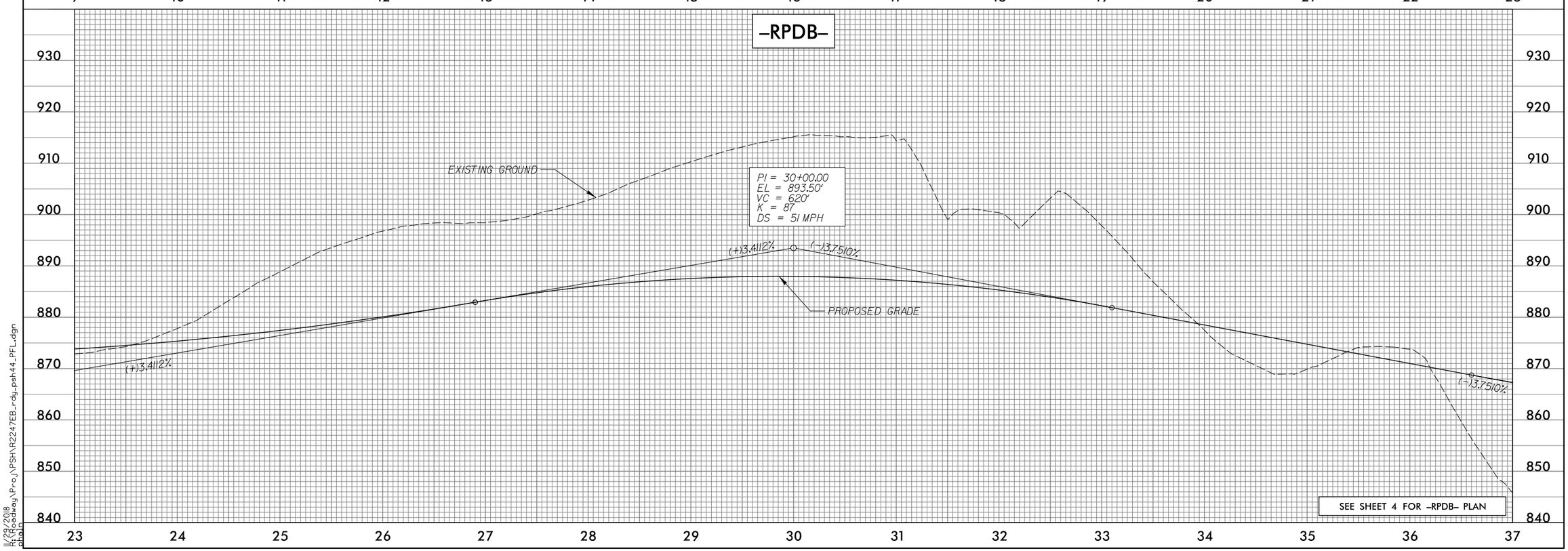

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	45
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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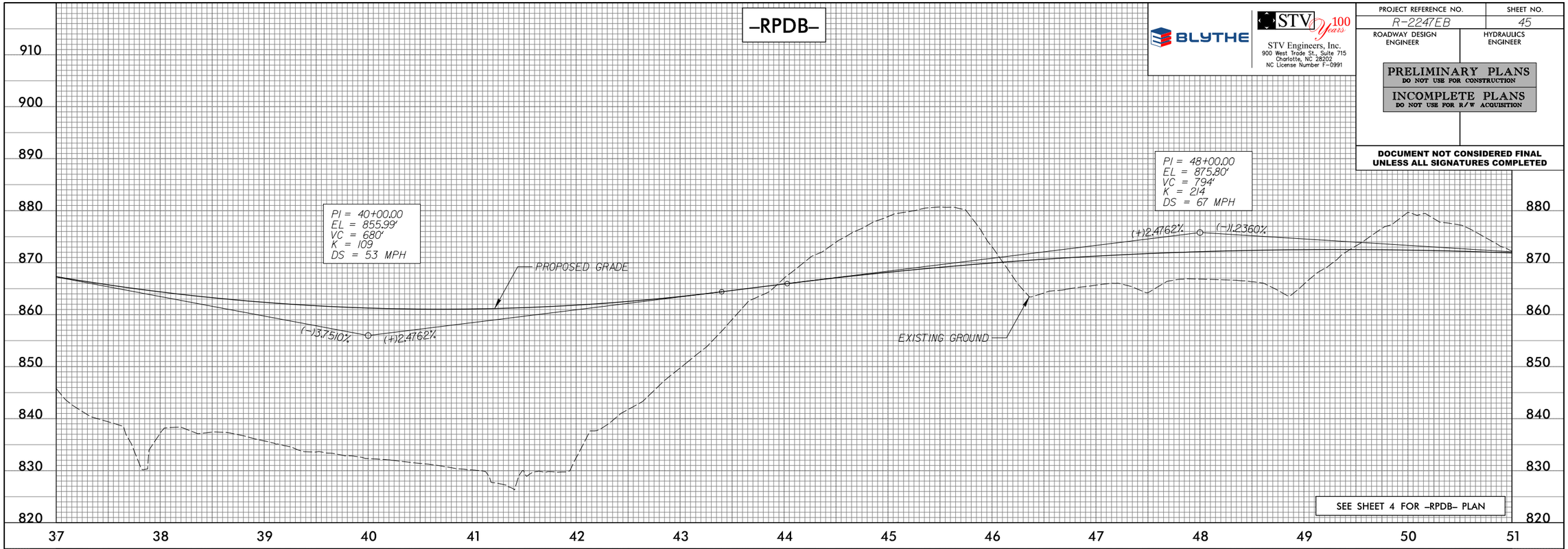

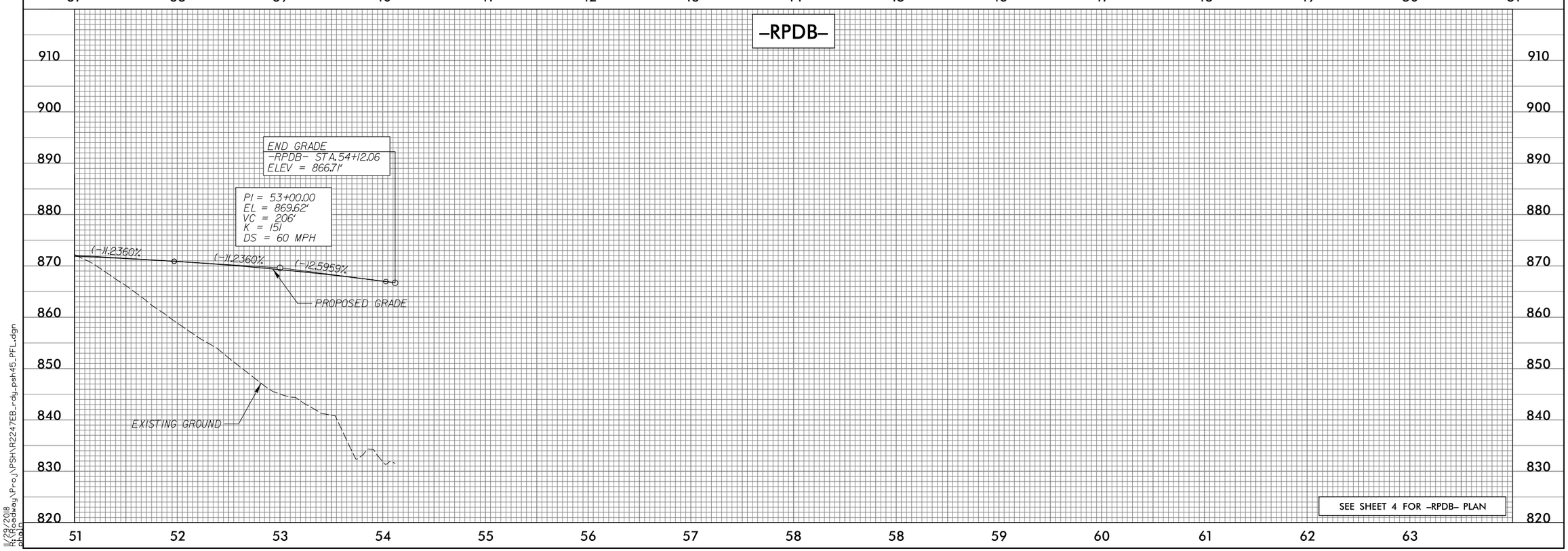

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	46
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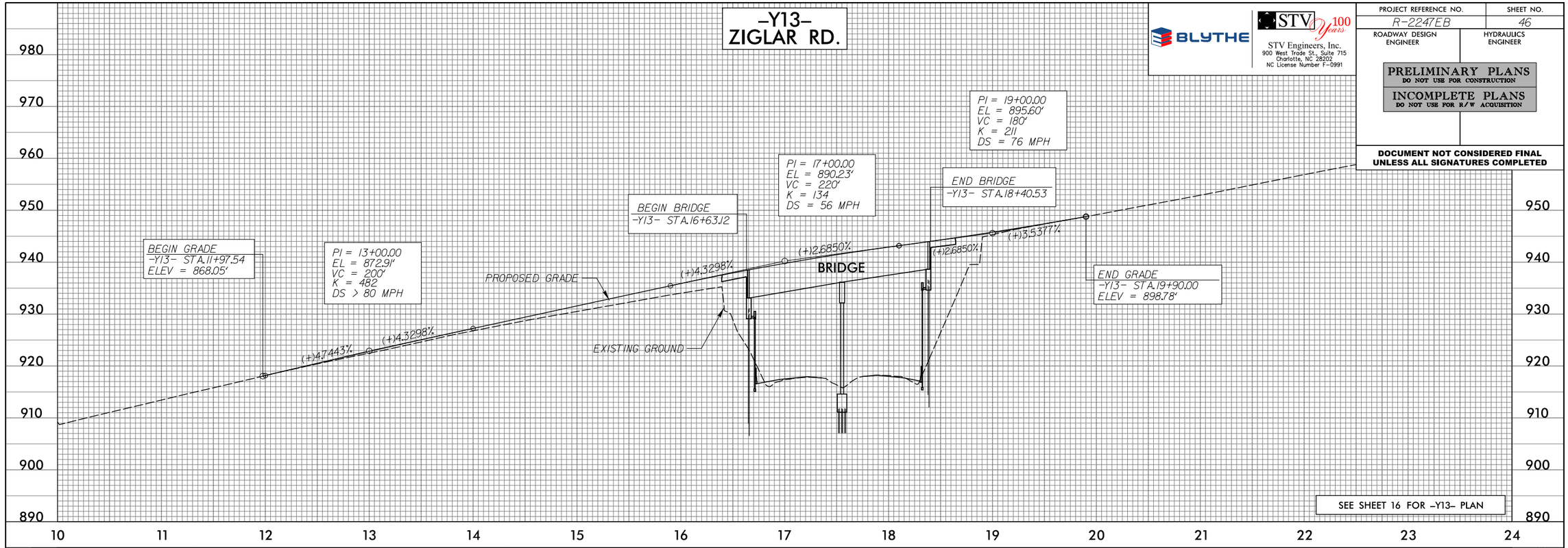

SEE SHEET 16 FOR -Y13- PLAN

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	47
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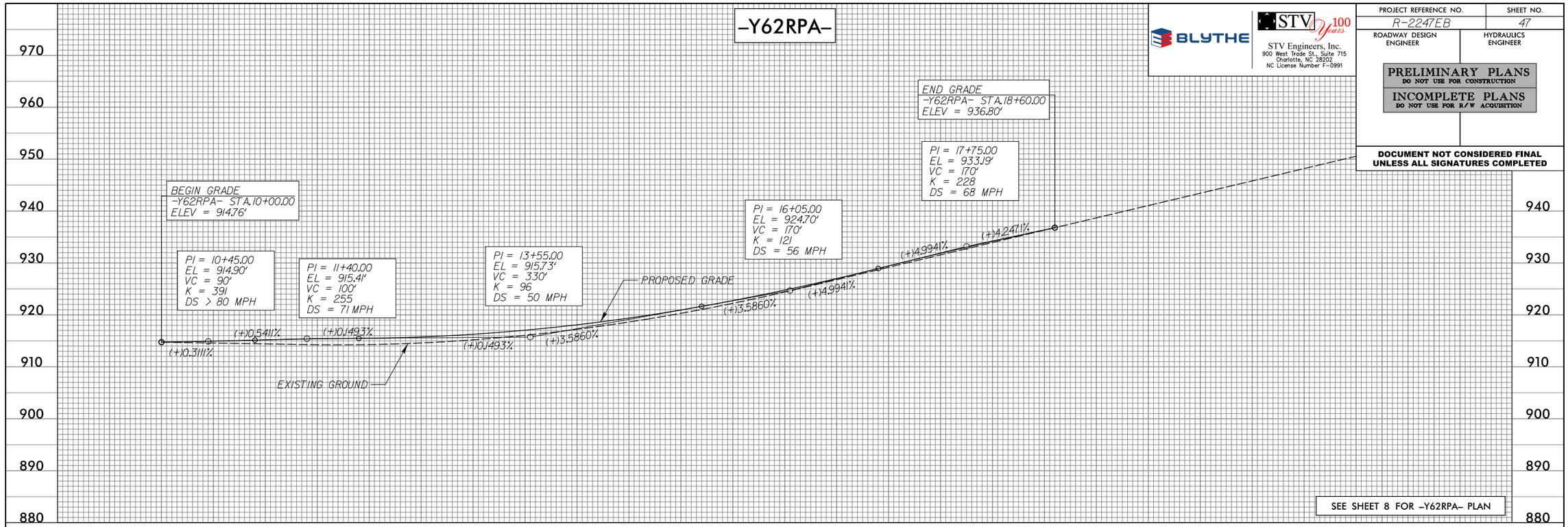

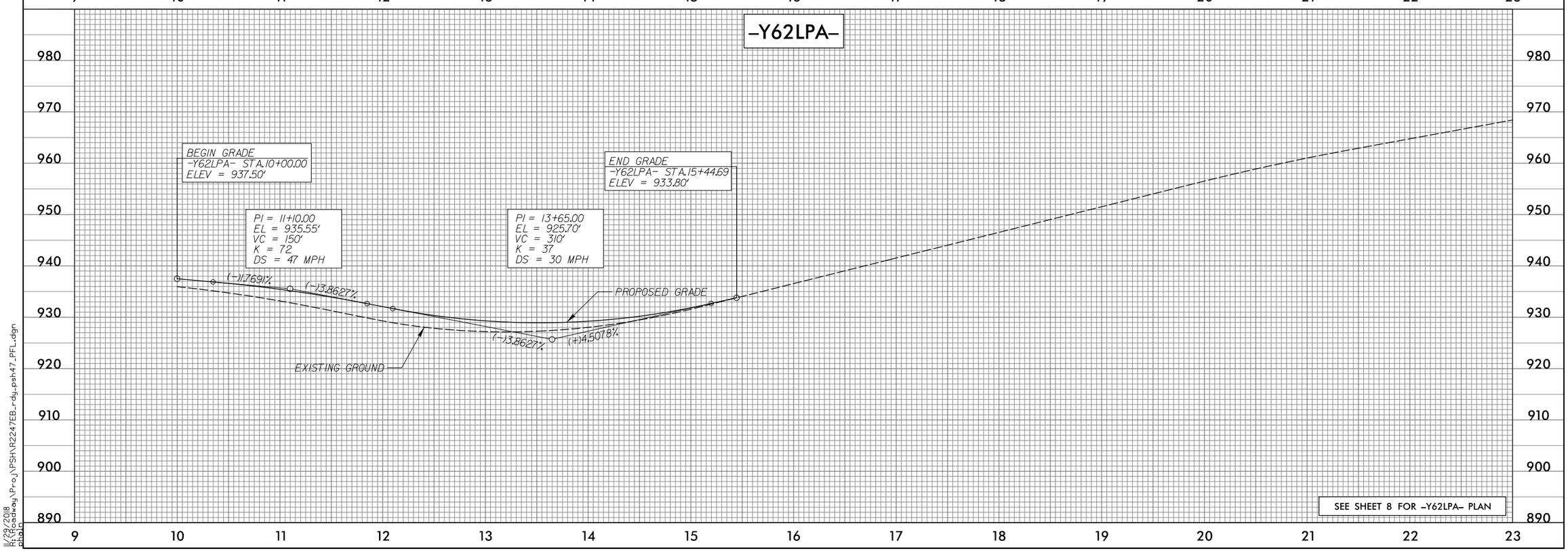

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	48
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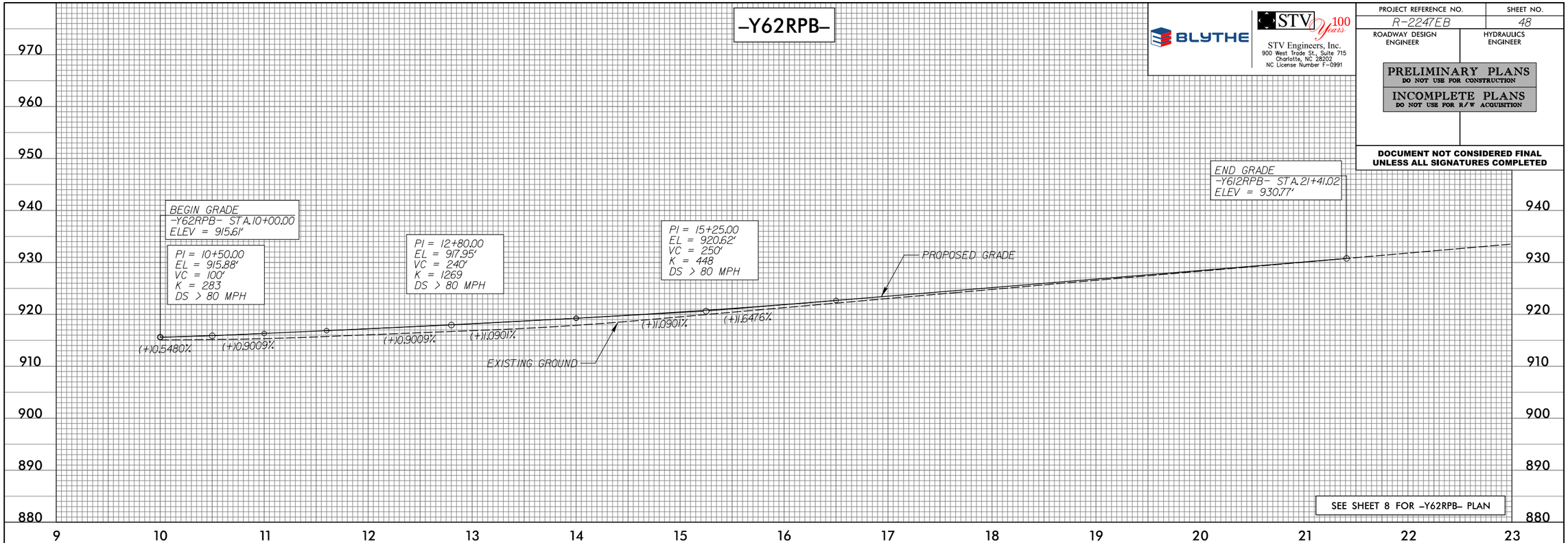
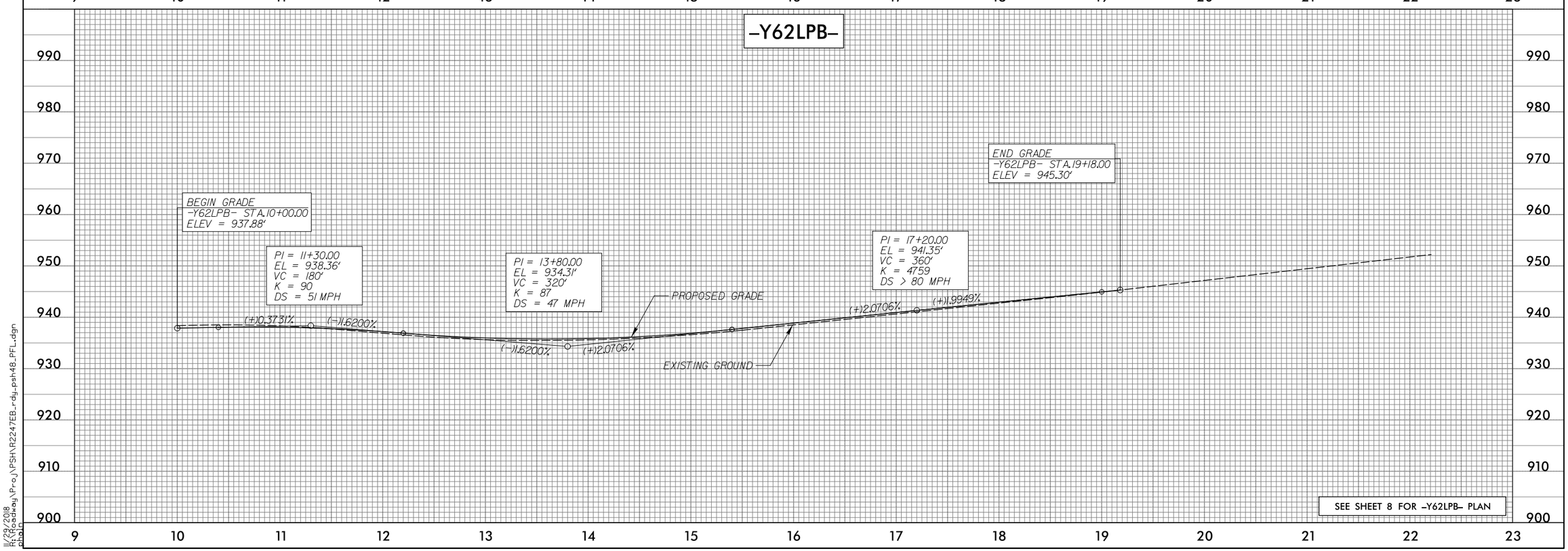


SEE SHEET 8 FOR -Y62RPB- PLAN



SEE SHEET 8 FOR -Y62LPB- PLAN

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	49
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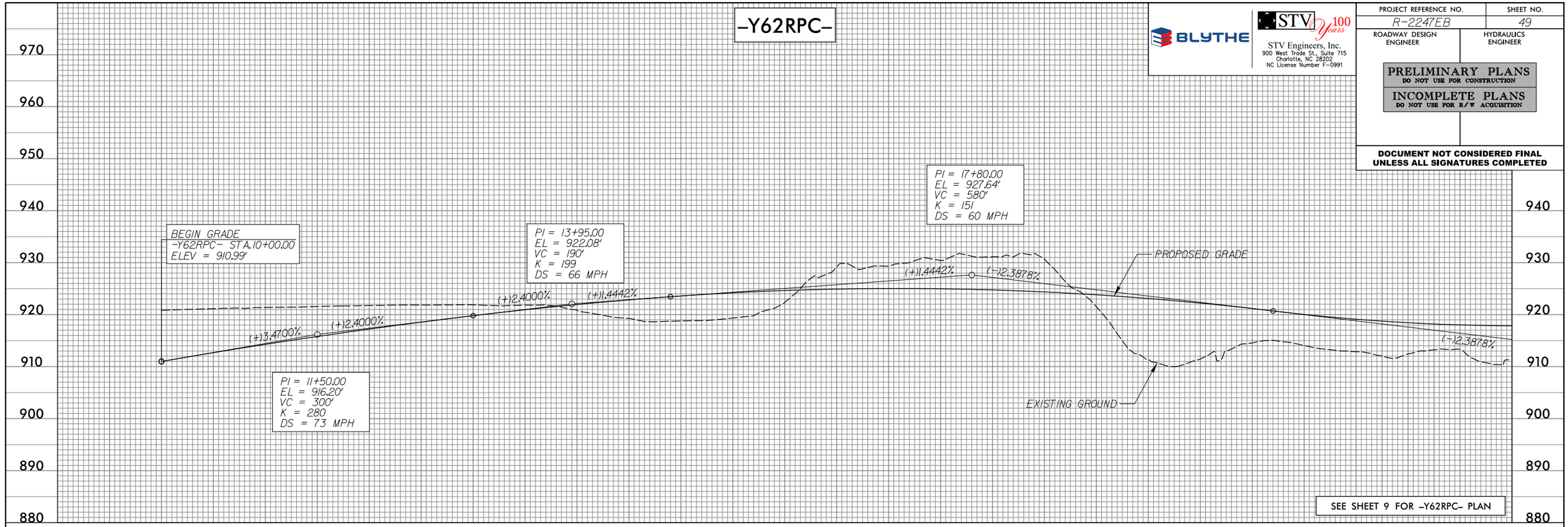
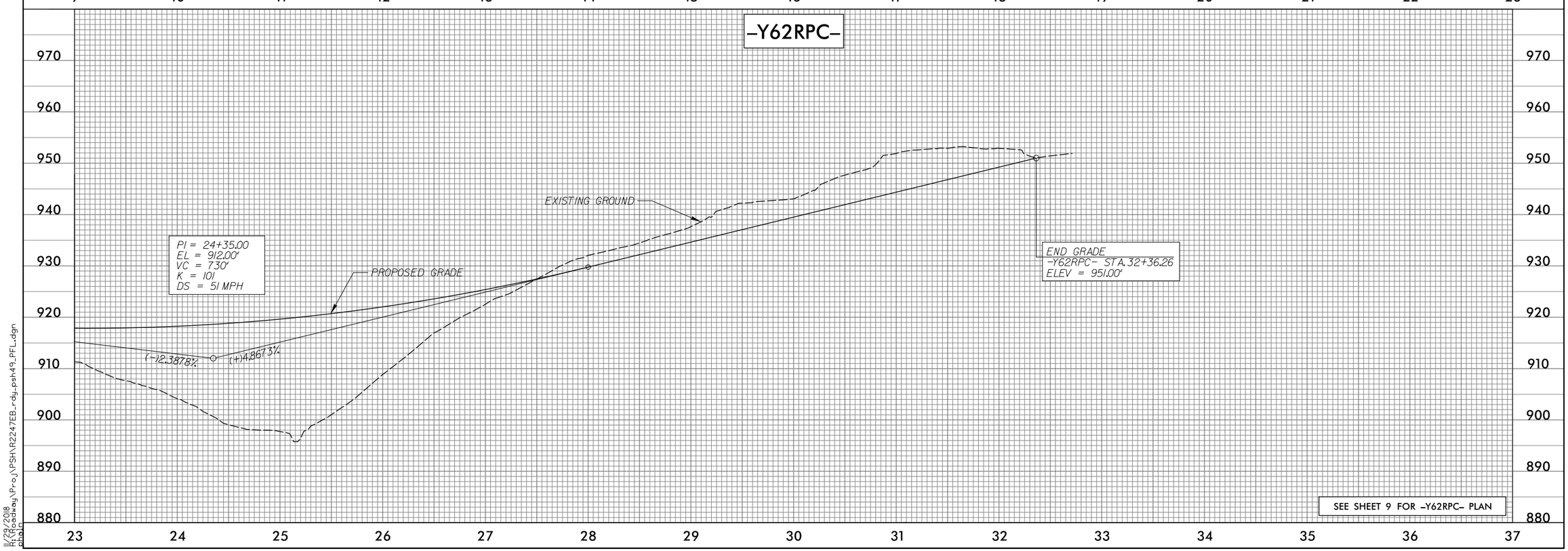


SEE SHEET 9 FOR -Y62RPC- PLAN



SEE SHEET 9 FOR -Y62RPC- PLAN

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	50
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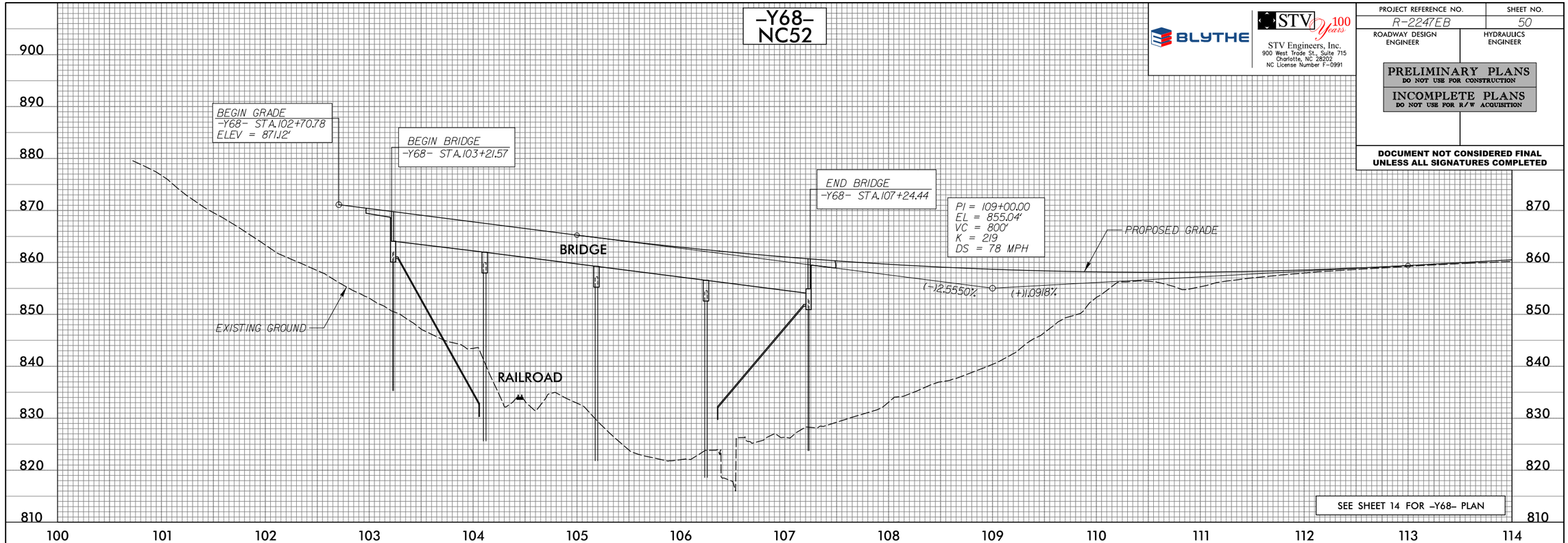

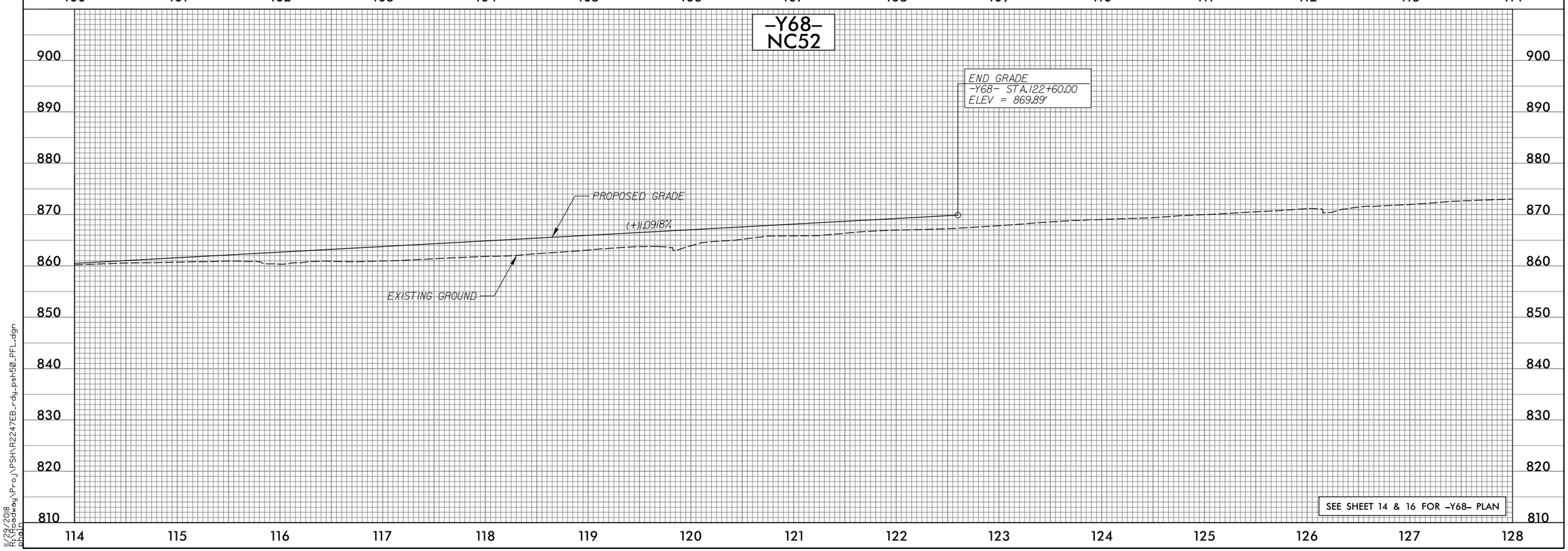

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PROJECT REFERENCE NO.	SHEET NO.
R-2247EB	51
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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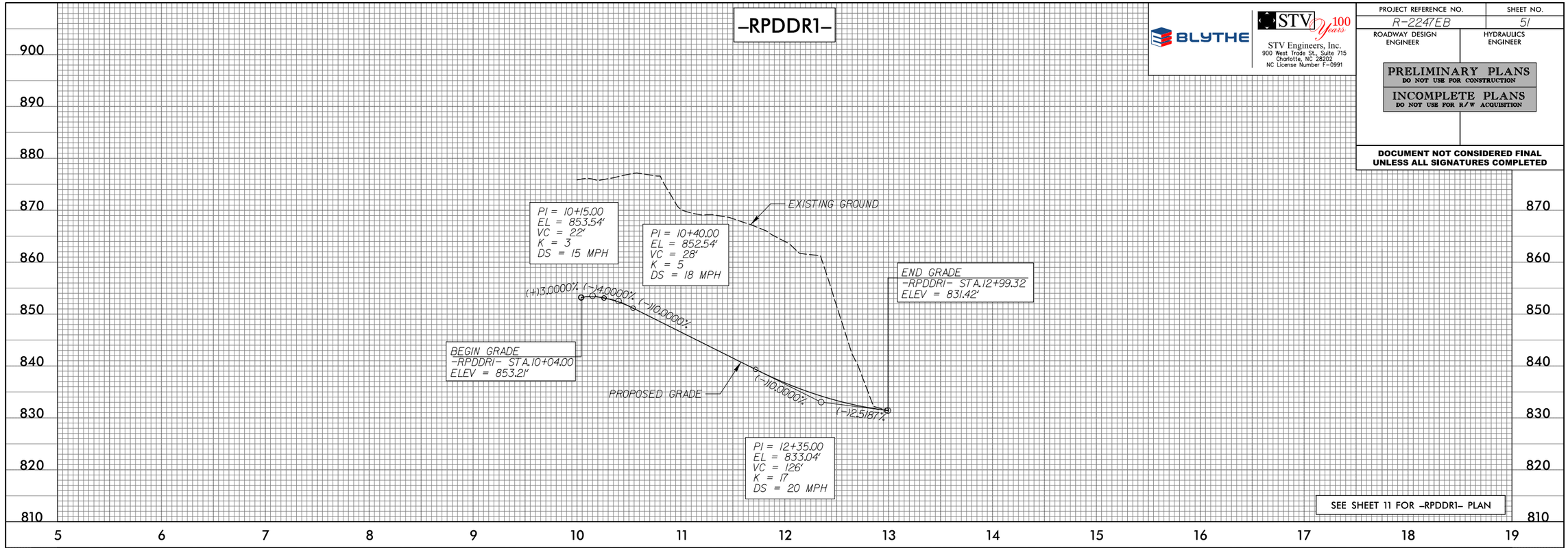

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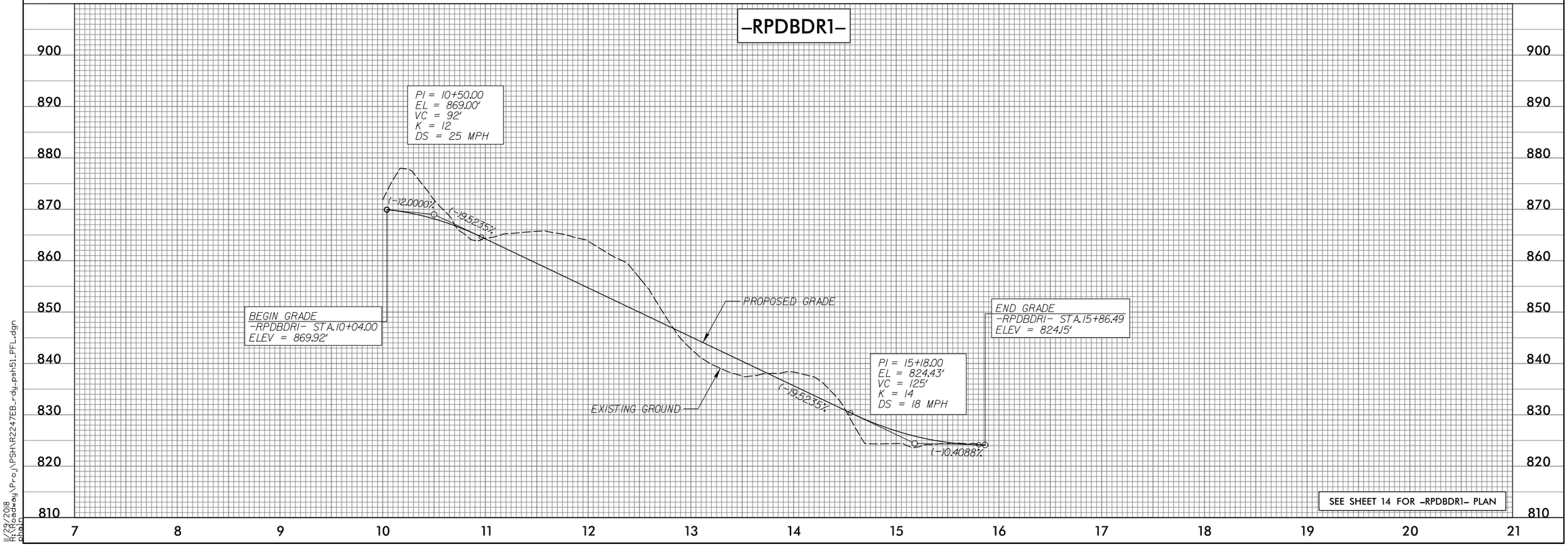

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